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CU consumer reports

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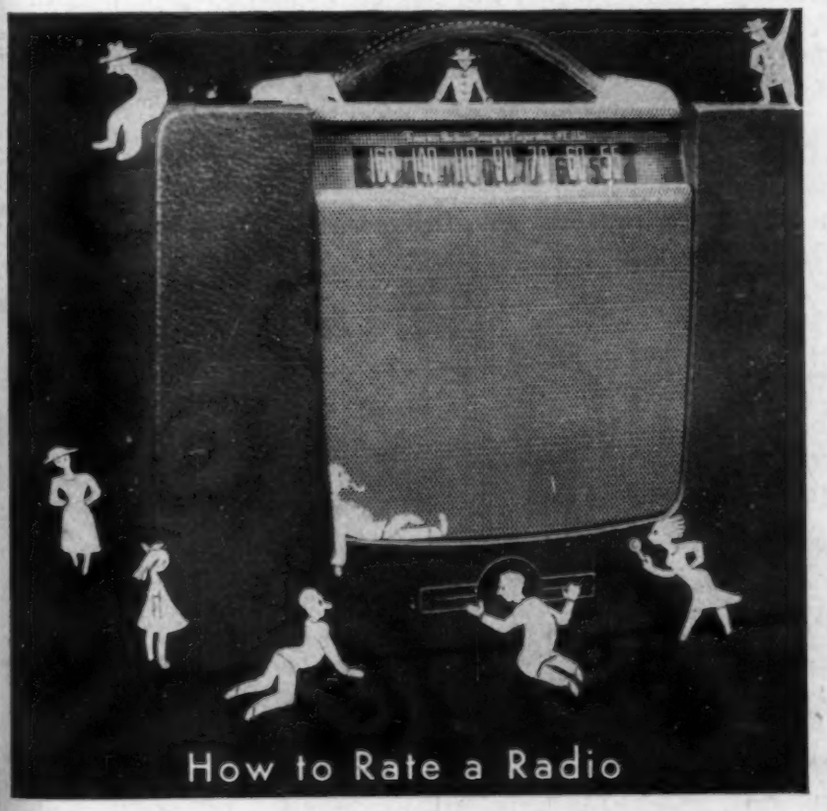

electric fans — 16 brands

portable radios — 26 brands

radio batteries — 23 brands

ice cream mixes — 13 brands

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the problem of infertility

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CU's eleventh annual meeting

CU's eleventh annual meeting took place on June 18, 1947, in Washington, D. C. At a morning meeting, reports on CU activities were made by President Colston E. Warne, Director Arthur Kallet, Treasurer Bernard J. Reis, and CU's Secretary, Dr. Harold Aaron. This was followed by an afternoon panel on "The Housing Crisis of 1947," and a dinner meeting at which "Atomic Energy and the Consumer" was the topic for discussion.

Philip Coombs, formerly Deputy Housing Expediter in Charge of Material Supplies, was moderator for the afternoon meeting, and the speakers included David Krooth, Co-Chairman, Housing Legislation Information Service, formerly Counsel to the Housing Expediter; Virgil Tobin, Director of the New Materials Section, Office of the Housing Expediter; Charles Abrams, of the New School for Social Research, and author of "The Future of Housing;" Ralph Pomerance, architect and CU Housing Consultant; and Lee Johnson, Executive Vice-President, National Public Housing Conference.

Some of the talks will be reported more fully in future issues of the *Reports*. Meanwhile, here are some of the highlights.

In outlining the over-all housing picture, Mr. Coombs listed the indictments against the housing industry, and pointed out that its failure has been caused by lack of organization, leadership, and technical advance, and by the "protective" restrictions with which the industry is surrounded, as well as by the total lack of long-range program and public understanding of the problem.

Mr. Krooth emphasized the need for industrialized housing — for giving up present handicraft construction methods for modern industrial processes — in order to achieve greater volume and lower costs. The few companies that have been developing such methods ought to be giving conventional building some competition by next year, he predicts.

Construction materials, delivered and put in place, account for about 76% of home-building costs. In discussing the new materials that are going to cut into those costs, Mr. Tobin described, among others, an "autonomous," self-contained wall, flooring of scrub oak, door frames of extruded sawdust, and utility cores of fiberglas.

Mr. Abrams suggested that burdensome local restrictions could be eliminated by making eligibility for FHA loans contingent on compliance with uniform regional codes. But, as he pointed out, this is only a small step towards solving the problem. The solution — government-sponsored housing — depends, he said, on making the public see the challenge in community planning.

Housing for low-income groups has always been in short supply, according to Mr. Pomerance. But now we aren't even providing for our high-income groups.

Continued on page 258

Elections to CU Board of Directors

Six Directors have been re-elected for three-year terms:

FRANK BEUBE, *Assistant Clinical Professor of Dentistry, School of Dental and Oral Surgery, Columbia University*

HARRY GRUNDFEST, *Physiologist; Assistant Professor of Neurology, College of Physicians and Surgeons, Columbia University*

JEROME R. HELLERSTEIN, *Lawyer; tax specialist, faculty member, N. Y. University Law School, Assistant Corp. Counsel, NYC, 1938, 1940*

ARTHUR KALLET, *Engineer; Director of CU, author of "Counterfeit," co-author of "100,000,000 Guinea Pigs"*

EMANUEL KLEIN, *Psychiatrist; CU consultant, Psychiatric School Medical Inspector, Board of Education, NYC*

BERNARD REIS, *CPA; Treasurer of CU, Investment Counsel, author of "False Security, the Betrayal of the American Investor"*

The complete tabulation of the ballots follows:

ARTHUR KALLET	32,118
BERNARD REIS	29,825
HARRY GRUNDFEST	28,576
FRANK BEUBE	28,074
JEROME R. HELLERSTEIN	24,958
EMANUEL KLEIN	24,533
GENEOFFA NIZZARDINI	19,419
DONALD HARRINGTON	15,456
JULIUS GOLDBERG	8,608
Total number of ballots	35,686

CU continues to grow: February, 1946—100,000 subscribers; June, 1947—169,000 subscribers

Letters

High-priced products?

Dear CU:

I question the desirability of the detailed analysis and reporting of such expensive items as Fisher and Scott radios, magnetic recorders, or two television receivers. Anyone who can afford to spend a thousand dollars for a radio or a reasonable facsimile of one, can also afford to make a mistake and purchase another one. The value of *Consumer Reports* is to families of the middle-income bracket who desire to receive full value for every dollar spent and generally are quite content to buy a good radio under two hundred dollars . . .

As a whole, it is my opinion that the *Reports* is increasingly catering to families with an income over ten thousand dollars, whose number, as you are well aware, is very small.

¶ We don't agree that many of our subscribers can afford a $1000 mistake, and a very large number of them have expressed interest in high-fidelity radio receivers. More important, however, is the fact that CU does not cover expensive items instead of cheaper items, but includes both expensive and inexpensive products in its tests and ratings.

No movie poll?

Dear CU:

Just whose idea was this misbegotten idea of having ratings of movies in the *Reports* anyway? And just why waste space on this sort of thing, anyway? You say ". . . to help *Reports* readers get 'Best Buys' for their movie money . . ." but that, I submit, is about the silliest rationalization I've ever heard.

¶ The *Reports* now carry a larger technical section than ever before, but the increased size has made it possible to add departments requested by many subscribers.

Blue Cross

Dear CU:

The Blue Cross is a competitor of mine but a good part of your article totally misrepresents this organization, both as to the limits of what it does and the charges. You admit that the Blue Cross is a nonprofit organization but you say that if socialized medicine and hospitalization, etc., were handled through the Government, they would be much cheaper. You have not as much as one logical reason for believing such a thing. In fact, as a matter of opinion, with political manipulation, it would probably, in the end, cost a great deal more for corresponding service rendered . . .

• • •

Dear CU:

I am disappointed that your article on Blue Cross plans does not take advantage of the opportunity to point out some generalizations that are important and that no one seems willing to discuss, such as:

1. Every insurance policy is a gamble with the odds against the insured;
2. hence one should not carry insurance on a risk that he can afford to carry himself (unless there are other inducements);
3. Blue Cross insures only risks that most policy-holders can afford to pay;
4. it does not insure the risk of crushing expense of a prolonged illness;
5. it is like an auto casualty policy that, instead of deducting the first $300 of liability, insures only the first $300.

. . . After presenting cogent reasons for not carrying Blue Cross insurance, your article weakly concludes that it should be carried by those who can afford it. It seems to me on the contrary that the fact that a person can afford it is a reason why he should *not* carry it. I assume that by "afford it" you mean that he can pay the premiums without sacrifice. If so, he can carry the limited losses covered by the Blue Cross. It is precisely the person who "cannot" pay even the small Blue Cross premiums without sacrifice who perhaps needs the insurance because he lacks the resources to carry even the small risk that the Blue Cross covers . . .

• • •

Dear CU:

The article on Blue Cross plans concludes that while the plans are not ideal they are better than nothing — or at least the best that is available if you can afford them. Just how you can arrive at such a conclusion is a

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consumer reports

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▶ *Product ratings represent the best judgment of staff technicians or of consultants in university, government, and private laboratories. Test samples are purchased on the open market by CU's shoppers. Ratings are based on laboratory tests, controlled use tests, authoritative opinion, experience of a large number of persons, or a combination of these factors. Interpretation even of test findings is a matter on which expert opinion may differ. It is CU's pledge that opinions affecting its ratings shall be as free from bias as it is possible to make them.*

director: Arthur Kallet **ass't director:** Madeline Ross **technical director:** Morris Kaplan

staff associates: Karl V. Amatneek (*head of electrical division*), Rissel Bonoff (*senior chemist*), Florence Gluesing (*librarian*), Dorothy Steele (*office manager*), Sidney Wang (*head of textile division*).

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vol. 12, no. 7, July 1947

Use Your Guide

CU's *Buying Guide* is no bookshelf ornament. Make it work. In this space we will remind you now and then of timely material in your 1947 *Guide*.

Now that vacation time is here, check your* Buying Guide *for information about —

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SUNGLASSES.....page 348
POISON IVY, POISON OAK.....page 163
HAY FEVER.....page 146
LIQUID STOCKINGS.....page 240
FRUIT DRINKS.....page 81

Reports in Progress

Work on the following reports, among others, is now under way. They will appear in forthcoming issues:

electric clocks
slide projectors
tomato juice
can openers
hand cleaners
laundry soaps
table radios
pancake flour
portable washing machines
automobile seat covers
hearing aid batteries
water softeners

SEE PAGE 274 FOR CUMULATIVE INDEX OF 1947 CONSUMER REPORTS TO DATE

. . . *for the people*

▶ *The following developments have been reported in actions taken by the Federal Trade Commission and the Food & Drug Administration against various companies and products.*

Fleischmann's Yeast

Fleischmann's Yeast is no longer being advertised for "direct human consumption and health purposes," and Standard Brands, Inc., the manufacturer, has no intention of resuming such advertising. This was brought to light in an answer to a complaint by FTC.

Since 1946, the answer alleges, ads have been devoted exclusively to the use of yeast in home baking; the sale of the product "naturally shrank" as the popularity of gelatin vitamin capsules and vitamin tablets grew. Because these products were more palatable, more convenient, and relatively inexpensive, they increased in popularity to the detriment of yeast.

Standard Brands' answer, made to FTC Supplemental Complaint No. 5107 (*Reports*, May), admits the dissemination of the advertisements challenged by the Government, but takes issue with many of the interpretations placed on them, and denies that they are false. Hearings will be held sometime in the future.

Anti-gray-hair vitamin

Further misrepresentations in the sale and advertising of *Pantocal*, a vitamin preparation, will not be made as the result of a stipulation to "cease and desist," made by the American Dietaids Co., Inc., and its advertising agency, Small & Seiffer.

The respondents agreed to stop advertising that *Pantocal* will prevent or end gray hair, or restore hair to its original, natural color. They will also refrain from using the expression "anti-gray-hair vitamin," and from using the following representations: that 88% (or any other definitely stated number) of those who have taken calcium pantothenate, the principal ingredient of *Pantocal*, have had the natural color of their hair restored. Also, that the product makes fingernails less brittle, increases resistance to sunburning and freckling, and improves the general health of the skin.

Coal additive

A. William Backus, trading as Coal Aid Laboratories, has agreed to stop making misrepresentations in the sale and advertising of *Coal-Aid*, a preparation consisting of sodium chloride and iron oxide, which is sold as an additive to coal.

According to FTC Stipulation No. 7583, Backus agreed to discontinue representing that *Coal-Aid* increases the efficiency of coal, causes coal to produce more heat or steam, results in any saving in fuel costs, liberates enough oxygen to have any material effect upon combustion, materially reduces soot, smoke, ash or clinkers, or has any significant, beneficial effect on combustion in furnaces or boilers.

Backus also agreed to change the name of his firm to eliminate "Laboratories."

"Philippine Mahogany"

The question of whether hardwoods grown in the Philippines may be called "mahogany" has finally been settled by FTC. These woods, which are definitely inferior to Honduras mahogany, were frequently called "mahogany" to mislead consumers. As a result, FTC had instituted charges against a number of offending firms. These were dismissed in 1931 and reopened in 1939.

In settling nine cases against outstanding furniture manufacturers, the Government prohibited the further use of the word "mahogany" alone, but permits use of the term "Philippine Mahogany" furniture.

When making future purchases, consumers should note that "Philippine Mahogany" is inferior to and should cost less than Honduras mahogany.

Butter-Nut coffee

Neither the blend, quality, nor flavor of *Butter-Nut* coffee has been insured for one million dollars or any other amount, and advertising which indicates that the coffee has been so insured is false, according to a release by FTC.

The insurance policy referred to is a bodily injury liability policy covering the business operations of the company, and does not cover the coffee, its blend, quality or flavor.

Paxton & Gallagher Co., and its advertising representatives, Buchanan-Thomas, have agreed to stop making such misrepresentations.

Feminine hygiene products

Lee Products and Chemi-Culture Laboratories have been charged by FTC with disseminating false advertisements on certain feminine hygiene products in newspapers and in circulars, leaflets, and price lists.

Lee's Periodic XXX Pills and *Lee's Periodic Capsules* have been advertised as providing effective treatment for delayed menstruation and for regulating the menses. The complaint charges that both preparations are irritant laxatives, and that when taken under the conditions prescribed in the ads, they are potentially dangerous if the user has abdominal pains, nausea, or other symptoms of appendicitis. Also the pills will cause congestion of the lower gastro-intestinal tract and of the pelvic organs, while the capsules, when used as directed, will cause irritation of the kidneys and should not be taken under any condition for more than three successive days.

The company also sells *Lee's Feminine Tablets*. The Government claims that by using the word "Feminine" in the name, the respondent represents that the preparation is of peculiar benefit to and has a selective effect on women. This is not true, FTC says.

Continued on page 274

RADIOS

handbag size

camera size

It would be nice, in these days of high prices, if CU could report a truly dual-purpose portable radio — one that could be used on outings, at camp, wherever house current is not available; one that would perform just as well as a small table-model radio when you plugged it into an electrical outlet at home.

But no such ideal seems to exist. Among 26 portable models which CU tested, none performed as well as good table radios do. Even the best of them — those rated as having "fairly good speech reproduction" — were appreciably inferior to good table radios.

A portable radio should be purchased, therefore, only if you want a set to use specifically where house current is not available. For home use, a portable radio is only a poor — and expensive — substitute for a table model.

For rating purposes, the radios tested have been divided into three classes: "portable," about the size of an overnight bag or valise, weighing about 15 pounds; "personal," about the size of a lady's handbag, weighing about five pounds; "camera-size," about as big as an ordinary roll-film camera, weighing about three pounds.

Most of the radios tested were of the portable-size class. These are least convenient to carry around, but offer most in the way of performance and economy of operation. All of them operated on both battery and house current. The *Emerson* 536 at $45.75 and the *ECA* 204 at $59.95 (discontinued, but may still be available) were judged to have the best over-all performance. Those with the best tone and most intelligible speech reproduction (but still only fairly good in comparison with small table-model radios) were the *Westinghouse* H-148, the *Emerson* 536, the *Aircastle* Cat. No.—700, and the *Aldens* Cat. No.— 1533L. Incidentally, the *Aldens* and the *Aircastle* — both mail-order brands — appeared to be identical.

Six personal-size radios were tested. All operated on both battery and house current, except for the *Trav-Ler* 5019, which was for battery operation only (at $19.95 it was the least expensive of all radios tested *). These radios are more convenient than the portables, but their convenience is paid for with even weaker volume and an even higher operating cost.

Of the two camera-size radios tested, both of which operated on battery only, the *RCA* 54B2 at $32.64 was better in over-all performance than the *Emerson* 508 at $37.50. They achieve their extreme lightness and small size at a great sacrifice in tone and volume, and have the added inconvenience of requiring frequent replacement of the single flashlight cell "A" battery, which lasts about four hours. (See report on batteries, page 237.)

> Operating a portable radio on batteries costs many times what it costs to operate a table-model radio, and the operating costs of personal- and camera-size radios put these items in the luxury class. Running a table radio for 100 hours costs about 20¢; for a portable run on batteries, this figure would be about $3.50; for the smaller radios, about $12.

In general, a radio that uses a single battery pack instead of separate "A" and "B" batteries, is uneconomical; it is unlikely that both the "A" and "B" sections will wear out at the same time. But when one does, a complete new pack must be purchased. And a pack of the proper size may be more difficult to purchase than separate "A" and "B" batteries.

The *Automatic* "Tom Thumb" personal radio (rated "Not Acceptable" because of short-circuit hazard) incorporates a "recharging" feature designed to extend the usable life of its batteries and thus cut down operating costs. Actually the dry cells are not recharged; that can be accomplished only with storage batteries. Rather, as the current is passed through the batteries in the reverse direction, they may be given a temporary additional lease on life.

Continued on page 234

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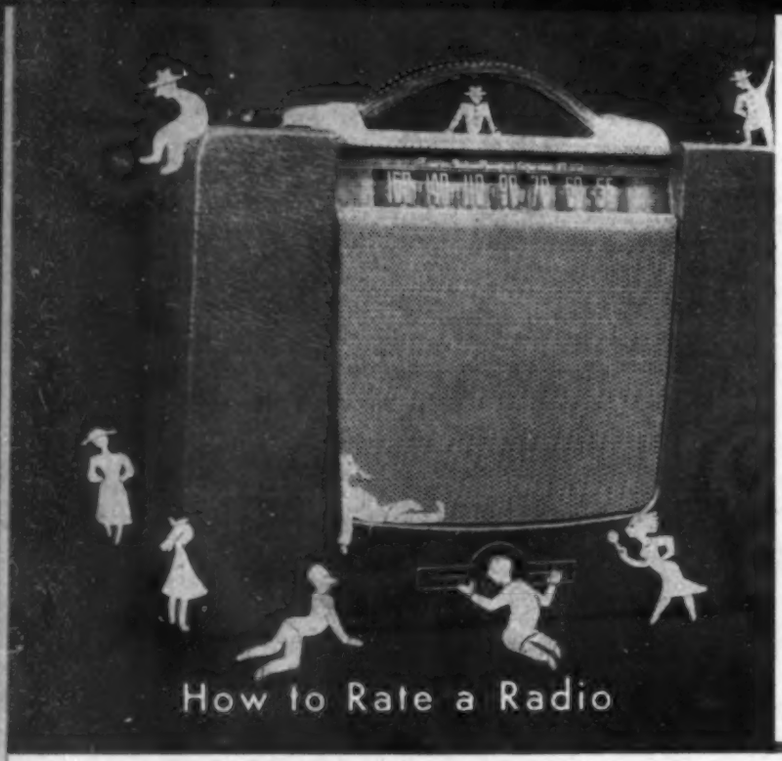
* *Prices given in the ratings represent manufacturers' list prices available when the* Reports *went to press. However, while CU's tests were being finished, the radio price tumble began. Many models are being reduced in price by manufacturers; a number of manufacturers are releasing new, lower-priced models; and many dealers are selling out some models at cut prices.*



How to Rate a Radio

First come the listening tests . . .

All radios go on trial before the CU listening jury, who make preliminary judgment of the quality of reproduction of speech and of music

CU has made no tests on this method of rejuvenating dry cells, but there are indications that such a feature is of definite value, and the manufacturer's claim to the effect that the process extends the normal operating life of the batteries "from 2 to 3 times" does not seem unreasonable. A word of warning: indiscriminate use of the "recharge" will result in damaged batteries; follow instructions.

The *General Electric* 250 and 260, and the *RCA* 65BR9 were equipped with bona fide rechargeable two-volt, nonspill storage batteries. This is a prewar feature which has now reappeared, and an idea that holds much promise as it is developed further. The advantage: no batteries to replace every few months at $5 a set.

But unfortunately these radios have several disadvantages. The tone of all three was considerably poorer than that of many of the other radios; the water level in the battery has to be kept up, which means adding water about every two or three weeks. Also the price was very high. Initial cost, however, may be offset by economy of operation, the operating cost on batteries being about the same as the operating cost of a table radio.

Note has been made in the ratings of how easily batteries and tubes can be replaced. It should not be necessary for you to take your radio to a serviceman just to have the tubes tested. When a radio becomes defective, the wise consumer takes the tubes by themselves. He takes them, that is, if he can get them out of his radio easily; if they are inaccessible, he has to take the complete set to the radio shop, and so puts himself unnecessarily at the mercy of the serviceman.

Two radios, the *Emerson* 536 and *ECA* 204, had circuits incorporating two loudspeaker tubes, one for battery and the other for house current operation — in theory a desirable feature, and one which should go far towards making a truly dual-purpose radio. But when the radios were operated on house current, tone and volume were but slightly improved.

Several of the radios tested used the new type of rectifier — a selenium rectifier instead of a tube. This means one less tube to go bad: the selenium rectifier probably gives more reliable service than the conventional rectifier tube. And it means practically instantaneous starting, not only on batteries but on house current as well.

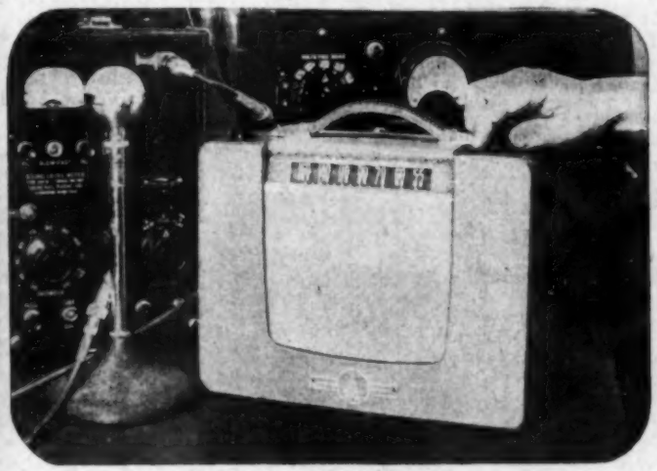
Unless a portable has a foolproof method for changing from battery to house current, it is possible for the set to keep draining the battery even after the cord has been plugged into a house outlet. Several sets tested had a receptacle inside the set into which the power cord plug had to be inserted in order to make the radio play on battery current. Before plugging the cord into a wall outlet, it is, of course, necessary to pull the plug out of the receptacle in the set, which automatically turns off the battery power.

Another change-over device, not so foolproof, is a switch on the front panel. Still another, not at all foolproof, is a switch on the back of the radio which can be overlooked very easily.

If you have a choice, don't buy a portable radio with the batteries already installed. Either buy the radio without batteries and get the batteries separately, or have the dealer install fresh ones. A radio which is standing on the counter, batteries installed, probably has been played before you purchase it, so that some of the usable life of the batteries will be gone.

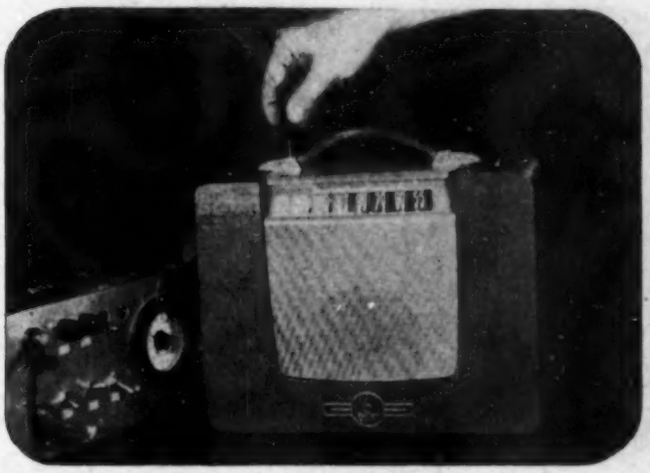
Test the radio you plan to buy for reception of the two stations in your vicinity which are at the extreme ends of the dial. There is usually a good deal of variation in tuning range among samples of the same brand.

. . . then laboratory tests, followed by . . .



If they pass listening tests, radios move on to the lab, where tests are made on such things as frequency response, selectivity, tuning range

. . . examination for shock hazard . . .



All exposed metal parts are tested for short circuit and shock hazard. Failure to pass here promptly puts radio in "Not Acceptable" class

Portable radio ratings

▶ *Unless otherwise stated these radios were built for both battery and ac-dc operation; they had built-in loop antennas, no tone controls and no short-wave bands. Except where noted, two samples of each radio were purchased for test. Listening tests were performed on both samples of each radio and additional laboratory tests on one sample of each "Acceptable" radio. Prices are* without *batteries, except where noted, and radios weighed from 11 to 14 pounds (including batteries) except where noted. Listing is in estimated order of over-all performance.*

Portable-size radios

acceptable

■ — EMERSON 536 (Emerson Radio & Phonograph Corp., NYC). $45.75 with batteries. Fairly good speech reproduction, good volume, fair usable sensitivity, very good interference rejection, good automatic volume control. Tuning range was two channels short of the high end of the band on the sample tested. Foolproof plug device for changing from battery to house current. No signal to indicate when radio is turned on. Batteries and tubes easily replaced. No shock hazard. Underwriters' label.

■ — ECA 204 (Electronic Corporation of America, Brooklyn). $59.95. Model discontinued but some may still be available. Fair speech reproduction, good volume, high usable sensitivity, very good interference rejection, good automatic volume control. Recessed, hard-to-grasp tuning knob. Foolproof plug device for changing from battery to house current. No signal to indicate when radio is turned on. Batteries and tubes easily replaced. No shock hazard. No Underwriters' label.

▶ *The following two radios were about the same in over-all quality.*

■—WESTINGHOUSE H-148 (Westinghouse Electric Corp., Sunbury, Pa.). $45. Weight 16 lb. Fairly good speech reproduction, comparatively low volume, high usable sensitivity, fair interference rejection, good automatic volume control. Dial poorly calibrated on sample tested. Very small, crowded dial with bad parallax. Switch on chassis, behind back panel, for changing from battery to house current (not foolproof). Battery pack (uneconomical). Back panel secured by two plain screws — unhandy for access to interior. Except for that, batteries and tubes easily replaced. No shock hazard. No Underwriters' label.

■ — ARTONE R-546 (Distributed by Affiliated Retailers, Inc., NYC). $27.95. Sold by R. H. Macy and May department stores. CU tested three samples of this radio, and found that the tone varied considerably from sample to sample. The best one had fairly good speech reproduction — as good as the best of the other portable radios tested. Good volume, high usable sensitivity, good interference rejection, very good automatic volume control. Rather stiff tuning knob on samples tested. Foolproof plug device for changing from battery to house current. No signal to indicate when radio was turned on when operating on batteries. Dial light when operating on house current. Batteries and tubes easily replaced. No shock hazard. No Underwriters' label. This radio appeared identical with the *Olympic* 6-606 (not tested).

■ — PILOT T-570 (Pilot Radio Corp., NYC). $84.50 with batteries. Weight 16 lb. Fair speech reproduction, fairly good volume, fair usable sensitivity, good interference rejection, fair automatic volume control. Bad parallax on dial indicator. Single crowded short-wave dial covering the 19-, 25-, 31-, and 49-meter broadcasts. Push buttons on front panel for changing from battery to house current. Dial light when operating on house current; lights on battery also when special button is depressed. Batteries and tubes easily replaced. No shock hazard. No Underwriters' label.

■ — ZENITH 5G003 (Zenith Radio Corp., Chicago). $39.95. Fair speech reproduction, fair volume, fair usable sensitivity, poor interference rejection, very good automatic volume control. Bad parallax on dial indicator. Foolproof plug device for changing from battery to house current. No signal to indicate when radio is turned on. Battery pack (uneconomical). Batteries and tubes easily replaced. No shock hazard. No Underwriters' label.

▶ *The following radios are not recommended for purchase. During jury listening tests, they were found to have poorer tone and speech reproduction than the radios above, and so were not given complete laboratory tests. Listing is alphabetical.*

○ — GENERAL ELECTRIC 250 (General Electric Co., Bridgeport, Conn.). $99.50 with bona fide rechargeable storage battery.

○ — GENERAL ELECTRIC 254 (General Electric Co.). $54.95 (tweed cover); $49.95 (leatherette).

○ — GENERAL ELECTRIC 260 (General Electric Co.). $139.50 with bona fide rechargeable storage battery. One sample tested.

○ — GILFILLAN 66B (Gilfillan Bros., Inc., Los Angeles). $54.95.

○ — HOFFMAN A700S (Hoffman Radio Corp., Los Angeles). $53.95.

○ — PHILCO 46-350 (Philco Products, Inc., Philadelphia). $59.80.

○ — RCA 65BR9 (Radio Corporation of America, Camden, N. J.). $89.95 with bona fide rechargeable storage battery.

○ — RCA 66BX (Radio Corporation of America). $65.20 with batteries.

○ — ZENITH 6G004Y (Zenith Radio Corp., Chicago). $69.95.

Continued on page 236

. . . and a final over-all examination

The general examination includes a check on the accessibility of the radio's batteries and tubes. The radio's size and weight are also noted

not acceptable

▶ *The following radios were rated "Not Acceptable" because of extreme shock hazard when operating on house current.*

○ — ZENITH 8G005YT (Zenith Radio Corp., Chicago). $114. Weight 24 lb. Fair speech reproduction, poor volume. Tuning range was one channel short at the high end of the band. Used battery pack (uneconomical) PLUS an additional 1.5 volt hearing-aid "A" battery. *Extreme shock hazard* on front panel hinges. Otherwise would have rated just below the *Artone* R-546.

○ — ALDENS Cat. No. — 1533L (Aldens, Chicago). $29.95 including batteries, plus shipping charges. Sold only by Aldens. Fairly good speech reproduction, fairly good volume. *Extreme shock hazard* due to a short-circuit hazard on the chassis, parts of which can be reached through an opening in the back panel. Otherwise would have rated just below the *Pilot* T-570. This radio appeared to be identical with the *Aircastle* except for name plate and color.

○ — AIRCASTLE Cat. No. — 700 (Spiegel, Chicago). $29.95 plus shipping charges. Sold only by Spiegel. Available with batteries as Cat. No. — 701 at $33.95 plus shipping charges. Dial poorly calibrated on sample tested. This radio appeared to be identical with the *Aldens* above except for the name plate and color. One sample tested.

Personal-size radios

▶ *Unless otherwise stated, these radios were for battery and ac-dc operation. Prices are without batteries. Two samples of each radio were purchased. Weights include batteries.*

acceptable

■ — TRAV-LER 5019 (Trav-Ler Radio Corp., Chicago). $19.95. Weight 4 lb. Fair speech reproduction for a personal radio. Not tested for other performance characteristics. Recessed, small, difficult-to-grasp tuning knobs. *For battery operation only* (no provision for operation on house current). No signal to indicate when radio was turned on. To replace batteries or tubes, long screw holding back panel must be removed. Batteries changed with difficulty; tubes fairly accessible.

not acceptable

▶ *The following three radios were rated "Not Acceptable" because of shock and fire hazard due to the possibility of a short circuit when operated on house current. Listing is in order of over-all performance.*

○ — GAROD 5D-3A (Garod Radio Corp., NYC). $39.95. Weight 7 lb. Fairly good speech reproduction, fairly good volume for this size radio. *Short-circuit hazard over whole of metal cabinet.* Otherwise would have rated first in "Acceptable" list. No Underwriters' label.

○ — SENTINEL 286P (Sentinel Radio Corp., Evanston, Ill.). $42.30. Weight 5 lb. Fair speech reproduction, fairly good volume for this size radio. Batteries easily replaced; tubes were inaccessible without removing chassis from cabinet. *Short-circuit hazard* on front panel release button and catch. Otherwise, would have rated just above the *Trav-Ler*. No Underwriters' label.

○ — AUTOMATIC "Tom Thumb" Mod. ATTP (Automatic Radio Manufacturing Co., Boston). $46.95. Weight 5 lb. Poor speech reproduction, good volume for this size radio. Dial poorly calibrated on sample tested. Recessed hard-to-grasp tuning knob; inadequate numbering scheme on dial. Battery life may be extended by rejuvenation feature which permits "recharging" from house current. Batteries changed with difficulty due to poor design of "A"-battery compartment; tubes practically inaccessible without removing chassis from cabinet. *Short-circuit hazard* on chassis which remains exposed while playing on house current because back panel cannot be closed when line cord is extended. Otherwise would have rated after *Trav-Ler*. No Underwriters' label.

▶ *The following radios were rated "Not Acceptable" because of very poor tone and speech reproduction. Listing is alphabetical.*

○ — MOTOROLA 5A5 (Galvin Manufacturing Corp., Chicago). $42.45. Speech reproduction on both samples tested was practically unintelligible due to a lack of treble.

○ — SILVERTONE Cat. No. — 07165 (Sears-Roebuck). $34.95 plus shipping charges. Both samples tested had bad distortion.

Camera-size radios

▶ *The following two radios were the smallest and lightest available when CU did its shopping. Both were for battery operation only. Two samples of each radio were purchased. Weights include batteries.*

acceptable

■ — RCA 54B2 (Radio Corporation of America, Camden, N. J.). $32.64 with batteries. Weight 3 lb. Better tone and volume than the *Emerson* but quite weak nonetheless. Fair usable sensitivity, fair interference rejection, fair automatic volume control. Single flashlight cell for "A" battery requiring frequent replacement. Batteries easily replaced; tubes accessible. Plastic case cracked under hand pressure.

■ — EMERSON 508 (Emerson Radio & Phonograph Corp., NYC). $37.50 with batteries. Weight 3 lb. Poorer tone, volume, and usable sensitivity than the *RCA*. Tuning rather difficult. Single flashlight cell for "A" battery, requiring frequent replacement. Back cover very troublesome to put on and take off. Batteries easily replaced; tubes accessible.

Batteries for Portable Radios

The supply is plentiful this year; here are CU's ratings of 23 brands

At last the supply of batteries for portable and personal radios is plentiful. You may have the pleasant experience, this summer, of being able to shop around for what you want, instead of having to snap up the first batteries you see. CU has tested a few popular sizes of "A" and "B" batteries. If your radio uses types other than those reported on here, you can be guided to some extent by the general performance reported by CU for a given brand.

Because dry cells begin to deteriorate immediately after manufacture, even when not in use, their performance will vary. The variation depends on the battery's age, and on storage conditions such as temperature. The only factors affecting a battery's performance over which the consumer can have some control are its brand and its age.

Some batteries are dated; that is, they will be stamped, "Put into service before . . ." the date after which the manufacturer feels that his battery will cease to perform well. Variations in performance among dated batteries were found by CU to be smaller than among undated brands. CU strongly recommends purchasing dated batteries.

Several manufacturers — *Eveready, Burgess, Bright Star, Acme* and some of the mail-order houses — sell dated batteries. As CU's tests showed, an undated battery may be feeble, or even dead, by the time it is purchased. For example, CU shoppers recently were able to purchase *Microlite* "A" batteries (flashlight size "D"), even though the manufacturer has stated that he discontinued their manufacture almost two years ago. CU shoppers also found one counter loaded with "A" batteries dated September, 1946 — this in late May, 1947, and at a large Montgomery Ward retail store.

Quite apart from the greater safety in buying them, dated brands revealed significant differences among themselves in the tests. *Eveready* gave consistently good performance, with the "B's" outstanding. Except for the flashlight size for personal radios, the *Sears-Roebuck* "A" and "B" models tested gave good service. And *Montgomery Ward's* "A" batteries ("B" batteries were not available for test) gave excellent performance. *Acme* batteries were consistently poor, and the performance of *Burgess* "B" batteries was disappointing.

The *Burgess* "A" flashlight batteries did not perform as well in these tests as they did in flashlight tests (*Reports*, October 1946). That is due in part, at least, to the difference inherent in the two types of service. Flashlight service tests are light drain runs of a few minutes each day, while radio battery service tests are heavy drain runs of several hours a day. And the test results are not applicable interchangeably.

Of dozens of different battery types available, CU chose four of the more popular: for portable radios, the 1½-volt "A" battery, ASA (American Standards Association) size F4, and the 45-volt "B" batteries in ASA size 30B, and the "half-size" 30BB; for personal radios, the 1½-volt "A" battery (flashlight size D), and the 67½-volt "B" battery.

The "half-size" 30BB, which is actually about ⅔ the size of 30B, can always be used instead of the full size. For two batteries, the substitution means a saving in weight of 1½ pounds, and does not necessarily mean losing any service life so long as the best brand is used. There is no advantage in using the larger size.

The undated flashlight-size "A" batteries included five "leak-proof," or metal-jacketed models. Labels claim that these batteries not only do not leak, but "stay fresh for years." And in case they leak and damage your flashlight, the guarantee assures replacement without charge.

But the guarantee does not offer to replace a damaged radio, and at least one such battery, to CU's knowledge, leaked at top and bottom. In general, however, CU's experience was that batteries marked "leak-proof" tend actually to be leakproof. Whether they stay fresh for years is still being investigated, but it appears now that undated, "leak-proof" batteries are a better risk than paper-jacketed, undated batteries.

Several batteries had seals covering plug receptacles in order to assure the purchaser that the battery had not been used previously — a commendable practice, and one to be encouraged.

How CU tested

Tests consisted of determining how long it took batteries to drop to their lowest useful voltage. Drain was fixed at approximately that of the normal load in a radio by using resistors, and batteries were discharged daily for predetermined test periods. The selection of the resistances and the time intervals was guided by the test methods of the American Standards Association.

In the case of "A" batteries for personal radios, the time interval was not a fixed period each day, but a single run down to 0.9 volt, a recovery period of 20 hours, and a second run down to 0.9 volt.

Quality for all batteries was judged on the basis of the number of hours of service rendered by the samples, and on a consideration of the average voltage during life.

Two to four batteries of each brand were tested.

Ratings follow on the next page

Radio battery ratings

▶ *Batteries are listed in order of hours of service given under test conditions by samples tested; for dated batteries, this figure is corrected for differences in expiration dates.*

Prices quoted for mail-order houses are those for their retail stores. Batteries are available at prices about 25% lower than list at radio supply stores such as those on Cortlandt Street in New York, at Lafayette Radio stores in New York and Boston (Burgess and RCA), *Concord Radio in Chicago and Atlanta* (Burgess), *Allied Radio in Chicago* (Burgess), *and Burstein-Applebee in Kansas City, Mo.* (Eveready).

"A" batteries (1½ volts) for personal radios

— *Dated brands*

acceptable

■ — WARD'S Cat. No. — 86-3260 (Montgomery Ward). 8¢. 7.2 hours.

■ — EVEREADY 250 (National Carbon Co., NYC). 10¢. 6 hours.

■ — BURGESS 2 (Burgess Battery Co., Freeport, Ill.). 10¢. 5.7 hours.

■ — BURGESS 2R (Burgess Battery Co.). 10¢. 5.7 hours.

■ — BRIGHT STAR 10M (Bright Star Battery Co., Chicago). 10¢. 5.6 hours.

■ — USALITE 75 (U. S. Electric Mfg. Corp., NYC). 10¢. 5.5 hours.

■ — WINCHESTER 1511 (Winchester Arms Co., New Haven). 10¢. 5.4 hours.

■ — SCOUT X 173 (Rexall Drug Stores, distributed by United-Rexall Drug Co., Boston). 10¢. 5.2 hours.

■ — BOND 102 (Bond Electric Corp., New Haven). 10¢. 5.1 hours.

not acceptable

▶ *The following batteries are rated "Not Acceptable" because of the short life of the samples tested.*

○ — HOMART Cat. No. — 4654 (Sears-Roebuck). 10¢. 4 hours.

○ — STERLING Size D (Sterling Battery Co., NYC). 5¢. 3.8 hours.

○ — STERLING HD20 (Sterling Battery Co.). 5¢. 3.7 hours.

— *Undated brands*

▶ *Because of the uncertainty about the age of undated batteries, the results shown apply only to the batteries tested.*

■ — RAY-O-VAC 2LP (Ray-O-Vac Co., Madison, Wis.). 10¢. "Leakproof." 5.5 hours.

■ — SEARS POWERMASTER (Sears-Roebuck). 10¢. "Leakproof." 5.5 hours.

■ — WARD'S Cat. No. — 86-3265 (Montgomery Ward). 10¢. "Leakproof." 5.5 hours.

■ — FIRESTONE 7-C-1 (Firestone Tire & Rubber Co., Akron). 10¢. 5.5 hours.

■ — HOMART Cat. No. — 4650 (Sears-Roebuck). 10¢. "Leakproof." 5 hours.

■ — WARD's Cat. No. — 86-3259 (Montgomery Ward). 10¢. "Leakproof." 5 hours.

■ — WIZARD B6732 (Western Auto Supply Co., Los Angeles). 5¢. 4.5 hours.

■ — SUPREME 10 (General Dry Batteries, Cleveland). 8¢. 4.5 hours.

○ — MICROLITE (Microlite Co., NYC). 10¢. 3 hours.

○ — RCA VS-001 (Radio Corp. of America, Camden, N. J.). 10¢. 2 hours.

"B" batteries (67½ volts) for personal radios

— *Dated brands*

acceptable

■ — EVEREADY 467 (National Carbon Co., NYC). $2.40. 39 hours.

■ — SILVERTONE Cat. No. — 6480 (Sears-Roebuck). $2.19. 37 hours.

not acceptable

○ — BURGESS XX45 (Burgess Battery Co., Freeport, Ill.). $2.45. 18 hours.

— *Undated brands*

▶ *Because of the uncertainty about the age of undated batteries, the results shown apply only to the batteries tested.*

■ — RAY-O-VAC 4367 (Ray-O-Vac Co., Madison, Wis.). $2.45. 25 hours.

■ — RCA VSO16 (Radio Corp. of America, Camden, N. J.). $1.71. 23 hours.

○ — WIZARD B6258 (Western Auto Supply Co., Los Angeles). $2.05. 14 hours.

○ — SENTINEL B7634 (Sentinel Radio Corp., Evanston, Ill.). $2.50. 13 hours, average; one battery dead when received.

"A" batteries (1½ volts) for portable radios

— *Dated brands*

acceptable

■ — AIRLINE Cat. No. — 62-21 (Montgomery Ward). 65¢. 150 hours.

■ — BURGESS 4F (Burgess Battery Co., Freeport, Ill.). 90¢. 132 hours.

■ — SILVERTONE 6430 (Sears-Roebuck). 73¢. 128 hours. Sealed plugs.

■ — EVEREADY 742 (National Carbon Co., NYC). 75¢. 122 hours.

■ — BRIGHT STAR 462 (Bright Star Battery Co., Chicago). 68¢. 121 hours.

■ — ACME 114 (Acme Battery Co., NYC). 90¢. 92 hours.

— *Undated brands*

▶ *Because of the uncertainty about the age of undated batteries, the results shown apply only to the batteries tested.*

■ — PHILCO P94 (Philco Radio & Television Co., Philadelphia). 81¢. 156 hours. ½-inch taller than average; be sure it will fit your radio before you buy.

■ — WIZARD B6110 (Western Auto Supply Co., Los Angeles). 69¢. 129 hours.

■ — RCA VS004 (Radio Corp. of America, Camden, N. J.). 63¢. 129 hours.

■ — GENERAL 4F1 (General Dry Batteries, Cleveland). 59¢. 120 hours.

■ — RAY-O-VAC P94A (Ray-O-Vac Co., Madison, Wis.). 72¢. 116 hours.

"B" batteries (45 volts) for portable radios

— *Dated brands*

acceptable

■ — EVEREADY 482 (National Carbon Co., NYC). $2.15. 249 hours. Half size.

■ — BURGESS B-30 (Burgess Battery Co., Freeport, Ill.). $2.15. 207 hours. Full size.

■ — BRIGHT STAR 30-03 (Bright Star Battery Co., Chicago). $2.15. 204 hours. Full size.

■ — BURGESS M-30 (Burgess Battery Co.). $2.15. 172 hours. Half size.

■ — BRIGHT STAR 30-33 (Bright Star Battery Co.). $1.50. 140 hours. Half size.

not acceptable

○ — ACME 830 (Acme Battery Co., NYC). $2.15. 78 hours. Half size.

— *Undated brands*

▶ *Because of the uncertainty about the age of undated batteries, the results shown apply only to the batteries tested.*

■ — RAY-O-VAC P5303 (Ray-O-Vac Co., Madison, Wis.). $1.50. 248 hours. Full size.

■ — PHILCO P-305 (Philco Radio & Television Co., Philadelphia). $1.80. 232 hours. Full size. Sealed plugs.

■ — RCA VS012 (Radio Corp. of America, Camden, N. J.). $1.50. 230 hours. Full size.

■ — WIZARD B6241 (Western Auto Supply Co., Los Angeles). $1.75. 226 hours. Half size.

■ — GENERAL V30B (General Dry Batteries, Cleveland). $1.45. 224 hours. Full size. Sealed plugs.

■ — WIZARD B6239 (Western Auto Supply Co.). $1.69. 216 hours. Full size.

■ — RCA VS013 (Radio Corp. of America). $1.50. 184 hours. Half size.

Electric Fans

Their purpose is to move air. Ten-inch fans cost more than smaller models, but stir up a big enough breeze to be worth the difference

The purpose of an electric fan is to move air, and the faster a fan moves air past you, the greater will be its cooling effect. But just how much relief from the heat you can get from a fan seems to be a debatable point.

The National Bureau of Standards, summarizing studies made by the American Society of Heating and Ventilating Engineers, puts it this way: "If the temperature and humidity are not too high, conditions which are uncomfortable without air motion can be made comfortable by air motion. Above a certain temperature and humidity, air motion is of no value and, on the contrary, makes conditions more unbearable. In general, when air motion is of value, the speed of the air is the important factor."

Now, if you still feel hot, here are the results of CU's tests on 16 brands of household or desk fans. CU tested two sizes: a larger, or ten-inch size, and a smaller eight-inch size. Eight-inch fans are cheaper, but the ten-inch fans are far superior. Only one small fan, and that an 8½-inch model (the *GE* FM9V1, a 1946 model that has been discontinued, but which may still be available), was found to have a cooling effect comparable to that of a ten-inch fan.

The three eight-inch fans rated cost approximately $8. For $5 more you can get an excellent ten-inch fan, and the "Best Buy" — the *Kenmore* 8000. The *Safe-flex*, the only rubber-bladed fan tested, was judged to be highest in quality. But, at $21.95, it was also extremely high in price.

Fans can be purchased in either oscillating or non-oscillating models. An oscillating stream of air in a room makes a greater number of people comfortable than a fixed stream does. And an oscillating fan does not produce a continuous draft. Although there is nothing to indicate that the use of a fan is generally harmful, some people are more susceptible to drafts than others.

A fan's cooling effect can be estimated by measuring its output, or the thrust that it exerts upon air. Generally speaking, the higher the thrust, the better the cooling effect. A fan should be able to move a substantial quantity of air, and do it quietly. All of the fans tested were fairly quiet, but the ten-inch *Poweraire* (at low speed) and the eight-inch *Pacemaker* were appreciably lower in noise level than the other brands tested.

It is very important that a metal-bladed electric fan have a well-designed, rigid wire guard, so constructed that a hand resting against any portion of the guard cannot touch the blades. Usually the front of the blades would give you nothing worse than a rap; but the back of the blades may cut severely. A guard that gives insufficient protection against the back of the blades can be extremely hazardous, especially if the on-off switch is located on the motor housing, or near the blades.

The *Diehl Junior*, *Emerson*, *Kenmore*, *Homart*, *GE* FM9V1 had well-designed guards. But poorly designed guards were found on both *Polar Cub* models, the *Poweraire*, *Westinghouse Lively Air*, *Jack Frost* and *Pacemaker*.

The rubber-bladed *Safe-flex* had no guard, nor did it need one. The blades on this fan might give you a wallop, but they would never cut. After several years, however, they may deteriorate, at which time they may be replaced at a Samson service station for about $4.

The oscillators

The angle of oscillation varied among the fans tested from 60° to 90° — a range that appeared adequate for any household use. Tilting angle varied from 20° to 90° upward, and from 0° to 35° downward. The *Safe-flex* had the greatest downward tilt.

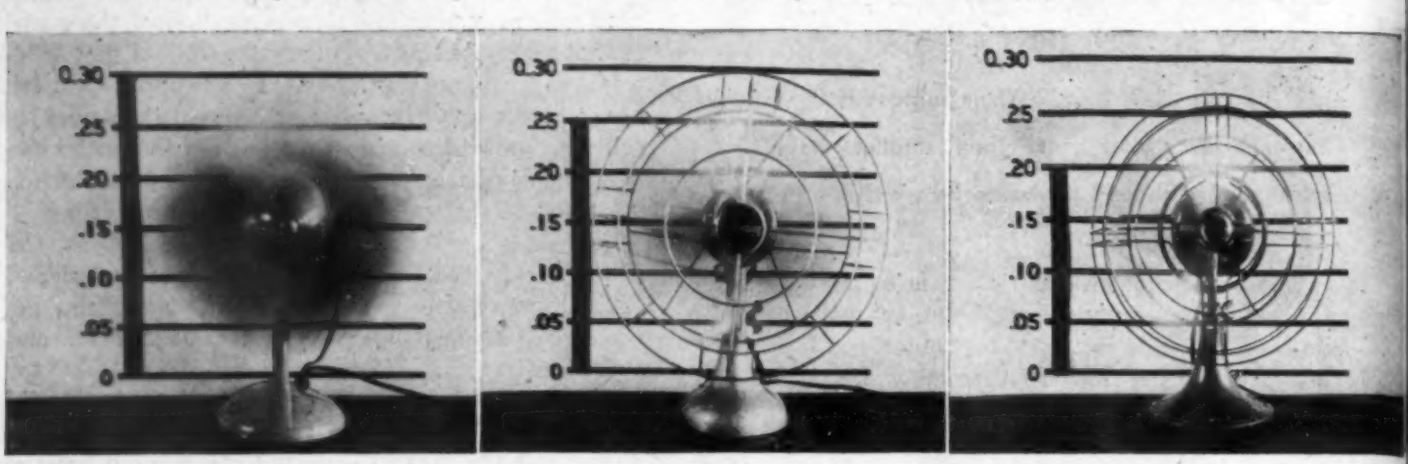
On most fans a simple knob was provided to start and stop oscillation, and on some fans the same knob could be used to regulate the angle of oscillation. But the *GE* FM10S41 had no means of stopping oscillation.

Four fans had safety-clutches designed to stop oscillation if it were obstructed in any way. This is a valuable addition: without it a fan might topple off a desk or shelf if oscillation were accidentally obstructed.

Fans — especially the oscillating ones — should be placed on a firm, solid surface. Vibration in some of the

In line with Bureau of Standards recommendations, the thrust that the fan exerts upon air is measured by noting the swing of the test platform upon which the fan is placed

Six fans: how they stacked up in the tests made by CU to determine their thrust . . .



Fan found to have highest output was rubber-bladed Safe-flex *(above, left); next highest was the "Best Buy," Sears'* Kenmore *(center). The* GE *FM9V1 was found to have a surprisingly high output for such a small (8½-inch) fan*

fans tested was scarcely detectable, but the lighter ones, and the eight-inch fans in particular, tended to "walk" unless placed on a solid support.

All of the fans tested operate on a-c only, and did not cause radio interference.

How CU tested

Each fan's thrust, or output, was measured in accordance with Bureau of Standards recommendations, by placing the fan on a platform suspended from the ceiling by long wires in such a way that it was free to move horizontally. As the air pressure created by the fan caused the platform to move, the motion was measured by means of a pointer placed on the platform, close to the floor. This movement, together with the weight of the fan and the platform, provided the information from which a fan's thrust, in pounds, could be calculated.

Besides output, CU also considered noise, the presence of an oscillating mechanism, and angle of tilt. The fans were also examined for the convenience of the switch, if any, the number of speeds and the method of changing from oscillation to non-oscillation. Fans were rated also on the basis of how easily they could be moved about or hung on a wall, the need for oiling, stability and vibration. Economy of use was determined by measuring wattage consumption, assuming 2000 hours of operation in a five-year period, and calculating the cost at 4¢ per kilowatt-hour (*see table*).

The ratings that follow indicate whether a fan carried the label of the Underwriters' Re-examination Service, though absence of the label does not necessarily mean that safety requirements have not been met.

Electric fan ratings

best buy

■ ■ — KENMORE Cat. No. — 8000 (Sears-Roebuck). $13.30 plus shipping charges. Ten-inch oscillating fan. Oscillation angle adjustable. Could be hung on wall. Good guard. Switch on base of fan. Only one speed, although manufacturer's literature described it as two-speed. Five-year guarantee. Did not carry Underwriters' label. This fan appeared to be identical with the *Diehl Junior* Model C10AJ17, except that it had a carrying handle.

acceptable

▶ *Listing is in order of over-all quality. For listing in order of output, see accompanying chart.*

■ — SAMSON SAFE-FLEX Model 1046-N (Samson United Corp., Rochester, N. Y.). $21.95. Ten-inch oscillating fan. Could be hung on wall. No guard: had rubber blades. Wt. 9 lb., somewhat clumsy to carry. Switch on base of fan. One-year guarantee. Did not carry Underwriters' label.

■ ■ — KENMORE Cat. No. — 8000 (see "Best Buys").

■ — DIEHL JUNIOR Model C10AJ17 (Diehl Mfg. Co., Somerville, N. J.). $16.25. Ten-inch oscillating fan. Oscillation angle adjustable. Could be hung on wall. Switch on base of fan. No guarantee. Did not carry Underwriters' label.

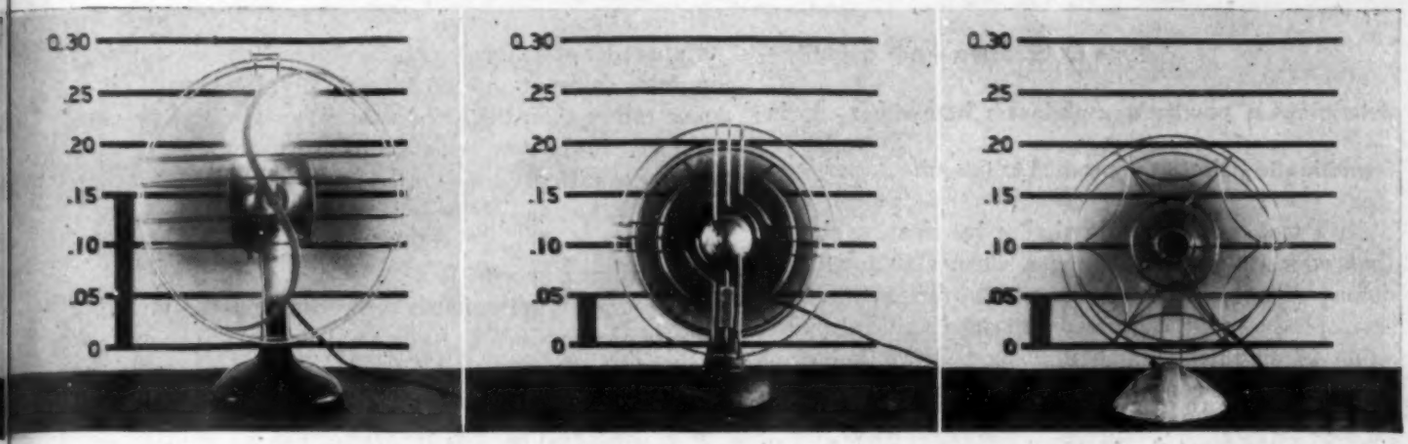
■ — COOLSPOT Model 562 (Signal Electric Mfg. Co., Menominee, Mich.). $16.54. Ten-inch oscillating fan. Had automatic safety clutch to protect motor if oscillation is obstructed. Could be hung on wall. Fair guard. Switch on base of fan. No guarantee. Did not carry Underwriters' label. No instructions for lubrication.

■ — WESTINGHOUSE POWERAIRE Model 10PA (Westinghouse Electric Corp., Springfield, Mass.). $23.95. Ten-inch oscillating fan. Had automatic safety clutch to protect motor if oscillation is obstructed. Could be hung on wall. Faulty guard design left leading edge of fan unprotected at rear, especially at bottom near switch location. Only fan tested that had two speeds. At low speed, output was lowest of all 10-inch fans, but still substantially higher than the average 8-inch fan. At this speed, fan was appreciably more quiet than at first speed. One-year guarantee. Carried Underwriters' label.

■ — EMERSON Model 2450B (Emerson Electric Mfg. Co., St. Louis). $20.95. Ten-inch oscillating fan. Oscillation angle adjustable. Could be hung on wall. Good guard. Switch on base of fan. Wt. 10 lb., second heaviest fan tested. Five-year guarantee. Did not carry Underwriters' label.

■ — GE Model FM9V1 (General Electric Co., Bridgeport, Conn.). $21.01. A 1946 model, no longer being made; some may still be available. 8½-inch oscillating fan. Had automatic safety clutch to protect motor if oscillation is obstructed. Could be hung on wall. Good guard. Switch on base of fan.

. . . the higher the bar (showing thrust in pounds), the greater the fan's effectiveness



Low in output were Homart *(above, left), and all eight-inch models such as* Jack Frost *(center) and $2.90* Eskimo *(above, right) not rated because it has been discontinued, but included in thrust tests to see how cheap fan performed*

One-year guarantee. Carried Underwriters' label. Slightly top-heavy and therefore somewhat unstable when tilted. Although fan was 8½ inches in diameter, performance was comparable to that of 10-inch fans.

■ — R & M DELUXE Model D-10A6-0 (Robbins & Myers, Inc., Springfield, Ohio). $23.45. Ten-inch oscillating fan. Oscillated continuously unless stopped by use of screwdriver. Oscillation angle not adjustable. Could be hung on wall. Fair guard. Switch on base of fan. Wt. 11½ lb., heaviest fan tested. Five-year guarantee. Did not carry Underwriters' label.

■ — GE Model FM10S41 (General Electric Co.). $15.74. Ten-inch oscillating fan. Oscillated continuously unless stopped by use of screwdriver. Could be hung on wall. Fair guard. Switch on motor housing. Cord length only 4¼ ft., although manufacturer's literature listed it as 7 ft. One-year guarantee. Carried Underwriters' label. Fan had light plastic base which made it somewhat unstable when tilted upward.

■ — WESTINGHOUSE LIVELY AIR Model 10LA (Westinghouse Electric Corp.). $11.95. Ten-inch oscillating fan. Oscillation angle adjustable. Could be hung on wall. Faulty guard design left fraction of an inch of the leading edge of blades unprotected at rear. Switch on motor housing might be a hazard because of guard inadequacy. One-year guarantee. Carried Underwriters' label.

■ — GE Model FM10S51 (General Electric Co.). $11.40. A 1946 model, no longer being made; some may still be available. Ten-inch fan, non-oscillating. Could be hung on wall. Fair guard. Switch on motor housing. Cord length only 5⅓ ft., although manufacturer's literature gave it as 7 ft. One-year guarantee. Carried Underwriters' label. Fan had light plastic base which made it somewhat unstable when tilted upward.

■ — POLAR CUB Model A325 (A. C. Gilbert Co., New Haven). $11.55. Ten-inch oscillating fan. Had automatic safety clutch to protect motor if oscillation is obstructed. Could not be hung on wall. Poor guard. Switch on motor housing was a hazard because of poor guard. Carried Underwriters' label. Somewhat unstable when tilted because of light base. No instructions for lubrication.

■ — HOMART Cat. No. — 9316 (Sears-Roebuck). $18.95 plus shipping charges. Ten-inch fan, non-oscillating. This fan may be used either as a desk fan or as a portable kitchen ventilator; the price includes an adjustable panel of aluminum, to be fastened to the kitchen window frame, on which the fan may be hung. Could be hung on wall. Good guard. Switch on motor housing. Cord length only 5⅔ ft., although catalogue listed it as 8 ft. Did not carry Underwriters' label.

■ JACK FROST Model 1-501 (Knapp-Monarch Co., St. Louis). $7.95. Eight-inch fan, non-oscillating. Could not be hung on wall. Faulty guard design left a leading edge of fan unprotected. Switch on motor housing was a hazard because of poor guard. One-year guarantee. Carried Underwriters' label. Somewhat unstable when tilted forward. No instructions for lubrication.

■ — POLAR CUB Model A321 (A. C. Gilbert Co.). $7.35. Eight-inch oscillating fan. May be made non-oscillating by lifting oscillating arm off its pivot. Could not be hung on wall. Poor guard. Had no switch. No guarantee. Carried Underwriters' label. Stability poor when tilted. No instructions for lubrication.

■ — WESTINGHOUSE PACEMAKER Model 8PMN (Westinghouse Electric Corp.). $7.95. Eight-inch fan, non-oscillating. Could not be hung on wall. Poor guard. Switch on motor housing. One-year guarantee. Did not carry Underwriters' label. Somewhat unstable when tilted because of light base.

Fans listed in order of output (pounds thrust)

Brand and model	Type	List price	Est. cost to run 5 yrs.	Output
SAFE-FLEX Model 1046N	10″ Osc.	$21.95	$4.10	.30
KENMORE Model — 8000	10″ Osc.	13.30*	2.60	.25
POWERAIRE Model 10PA	10″ Osc.	23.95	4.00	.25
COOLSPOT Model 562	10″ Osc.	16.54	3.20	.25
DIEHL JUNIOR Model C10AJ17	10″ Osc.	16.25	2.60	.25
EMERSON Model 2450B	10″ Osc.	20.95	2.90	.20
GE Model FM10S41	10″ Osc. (only)	15.74	2.80	.20
GE Model FM9V1	8½″ Osc.	21.01	3.10	.20
R & M DELUXE Model D-10A6-0	10″ Osc.	23.45	3.10	.20
GE Model FM10S51	10″ Non-Osc.	11.40	3.00	.20
HOMART Model — 9316	10″ Non-Osc. & Ventilating	18.95*	2.60	.15
LIVELY AIR Model 10LA	10″ Osc.	11.95	3.90	.15
POLAR CUB Model A325	10″ Osc.	11.55	4.20	.15
PACEMAKER Model 8PMN	8″ Non-Osc.	7.95	2.00	.10
JACK FROST Model 1-501	8″ Non-Osc.	7.95	2.40	.05
POLAR CUB Model A321	8″ Osc.	7.35	2.20	.05

* *Plus shipping charges*

Scouring Powders

Type of abrasive—not quantity—determines a powder's usefulness; herewith some information to help fit the product to the job

CU's tests on 36 brands of abrasive cleaners showed that your chances of getting a cleaner that will not damage the finish of a basin or a bathtub are poor. Only seven products of those tested contained a mild abrasive, while 21 contained harsh abrasives. The other eight products tested contained abrasives which were moderately harsh.

Included among the harsh cleaners were such well-known brands as *Babbitt's*, *Kirkman* and *Bab-O*. The cost of the mild products was usually higher than that of the harsh products. The cheapest mild scouring powder, *Co-Op Porcelain Cleanser*, cost 11.7¢ a dry pound, while the cheapest harsh powder, *Palco Cleanser*, cost 3.8¢ a dry pound. On the other hand, the most expensive scouring powder, costing 26.2¢ a dry pound, *Dexta*, was a harsh powder. The most expensive product of all was a "cake," *Skour Kakes*, at 36.3¢ a dry pound, and this also was harsh.

Chemical analyses of the ingredients of the scouring powders showed marked differences between brands. The percentage of soap present varied from approximately 1% in *Palco Cleanser* to approximately 23% in *Scotch Cleanser*. Percentage of soap *alone* is not, however, an indication of cleaning ability. An abrasive containing no soap can remove dirt. Scouring powders also contain, in varying amounts, other ingredients which aid in detergent action, such as trisodium phosphate and other alkaline salts.

The abrasive in a scouring powder may constitute as much as 97% of the finished product. Eighteen of the 36 brands tested contained approximately 90% or more of abrasive; the rest were between 70% and 90%. Some of the abrasive substances commonly used (in approximate order of increasing abrasiveness) are talc, whiting, pumice, feldspar and silica. Generally, the type of abrasive rather than the amount of either abrasive or non-abrasive in the powder determines its usefulness. It is for this reason that CU has rated "Acceptable" all scouring powders, but has divided them into three groups, mild, moderate, and harsh, so that the proper product can be selected for a specific job.

Most labels are seriously misleading in recommending use of the product as a "general purpose" cleanser. A few examples of improper claims may be seen from the following (all were of the harsh abrasive type):

▶ *Wyandotte Cleanser*, recommended for painted surfaces, tile floors, etc.

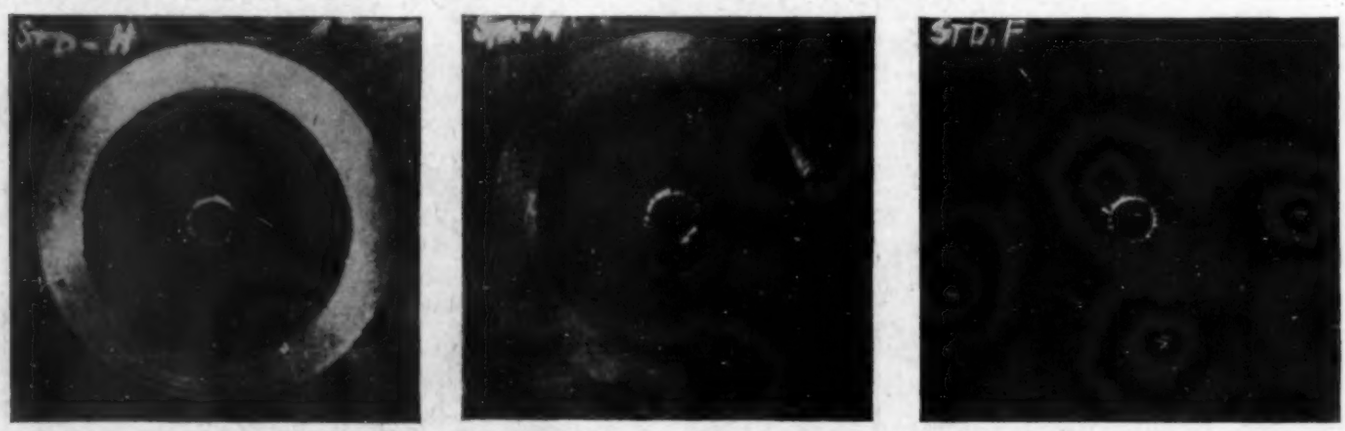
▶ *Red & White Scouring Cleanser*, recommended for porcelain, iron, etc.

▶ *Kay-Tee Household Cleanser*, recommended for linoleum, marble stairs, etc.

A good general rule to remember when you clean such surfaces as glass, porcelain, etc., is that scouring powders should be used only after other methods, such as cleaning with brush and soap or other detergent, have failed to remove the dirt. The use of an abrasive, even if it is fine, will tend to roughen the surface, so that it will collect dirt more easily. This, in turn, makes more and more scouring necessary and so the vicious circle continues. If a housewife never starts the use of abrasives on new sinks, basins and bathtubs, she will probably never need abrasives to clean them.

Where to use them

Items of chromium and almost all other plated ware, brass, copper, monel metal, linoleum, oil cloth or painted surfaces should never be scoured. Such items as aluminum, enamel and porcelain should be scoured with only



Glass plates show, left to right, wear caused by harsh, moderate and mild abrasives in CU's test. Use cleaner containing mild abrasive on aluminum, enamel, porcelain; harsher ones can be used on floor tiles, iron ware and unfinished floors.

the mildest of abrasives. Floor tiles, iron ware and surfaces which get a great deal of wear such as stairs and unfinished floors may be cleaned with harsh abrasives.

The wisest procedure of all with porcelain or enamel surfaces is to prevent stains from occurring. Some stains are difficult and sometimes impossible to remove. Some of the more common causes of stains are the following:

1. Constant dripping of water having a heavy iron content will cause yellow spots or streaks. To prevent such stains, keep all faucets in repair.
2. Tea leaves and coffee grounds, if allowed to remain in contact with an enameled surface, will discolor it.
3. Staining by lemon, orange and other citrus fruit juices, mayonnaise and other vinegar preparations, is possible even on acid resistant fixtures if contact continues for several hours.
4. Medicines, photographic solutions, and drain pipe solvent may ruin a surface if allowed to remain in contact with it.

Most of the brands tested are back in paper containers with metal ends, although some brands are still sold in all-paper containers. Since the packages are often set down in damp places, cardboard bottoms, which permit the powder to become wet and caked, are undesirable.

How CU tested

Two samples of each brand were examined for moisture content, percentage of free alkali, soap, alkaline salts, and abrasive, in accordance with accepted procedures of the American Society for Testing Materials. None were considered "Not Acceptable" on any of the above counts.

Degree of abrasiveness was determined by a method developed by the CU laboratory. The method showed up clearly differences in harshness between brands and gave consistently reproducible results. The Taber Abraser, an instrument used to test the abrasion resistance of textiles, was adapted to test the harshness of the scouring powders. For the test, rubber wheels under constant pressure were allowed to run over a revolving glass plate upon which the scouring powder (made up into a paste) had been placed. The degree of abrasion of the glass was taken as an indication of abrasiveness of the powder. Even the mildest powders caused some slight abrasion under the test conditions; but the harsh ones caused a great deal of abrasion (see cut).

All brands are "Acceptable," but only provided the use of those listed as "harsh" is confined to surfaces which can stand rough treatment.

Scouring powder ratings

acceptable

▶ *In order of increasing cost per dry pound within each group. Figures in parentheses represent cost per pound dry weight.*

Mild

■ — CO-OP PORCELAIN CLEANSER (National Cooperatives, Inc., Chicago). 21¢ for two 15-oz. packages (11.7¢).

■ — BON AMI POWDER (Bon Ami Co., NYC). 10¢ for 12 oz. (13.4¢).

■ — ROKEACH POLISH POWDER (I. Rokeach & Sons, Inc., Brooklyn). 10¢ for 12 oz. (13.6¢). Packaged in all-paper container.

■ — SWIFT'S Household Cleanser (Swift & Co., Chicago). 23¢ for two 14-oz. packages (14¢).

■ — BON AMI CAKE (Bon Ami Co.). 9¢ for 9½-oz. cake (15.2¢).

■ — POWOW Cleanser (West Coast Soap Co., Oakland, Calif.). 9¢ for 9 oz. (16.7¢). Packaged in all-paper container.

■ — PORCELA (Porcela-Radax Co., Pittsburgh). 19¢ for 14 oz. (21.8¢).

Moderate

■ — GOLD DUST Scouring Cleanser (Lever Brothers Co., Cambridge, Mass.). 5¢ for 14 oz. (5.8¢).

■ — OLD DUTCH Cleanser (Cudahy Packing Co., Chicago). 15¢ for two 14-oz. packages (9.2¢).

■ — HOUSE-BRITE Powdered Polish (Bloomingdale's, NYC). 10¢ for 14 oz. (11.5¢).

■ — SCOTCH Cleanser (Los Angeles Soap Co., Los Angeles). 21¢ for two 14-oz. packages (12.3¢). All-paper container.

■ — MY PAL Polish Powder (Pal Products Co., Brooklyn). 10¢ for 12 oz. (13.4¢).

■ — STRYKERS 1-2-3 CLEANSER (Strykers Soap Co., Div. of Newell Gutradt Co., San Francisco). 10¢ for 9 oz. (18.1¢).

■ — CO-OP ALUMINUM CLEANER (National Cooperatives, Inc.). 15¢ for 12 oz. (20.1¢).

■ — STRYKERS CAKE CLEANSER (Strykers Soap Co., Div. of Newell Gutradt Co.). 11¢ for 7⅔-oz. cake (24.2¢). Weight not stated.

Harsh

■ — PALCO CLEANSER (Pal Products Co.). 10¢ for three 14-oz. packages (3.8¢). Packaged in all-paper container.

■ — SUNBRITE CLEANSER (Swift & Co.). 10¢ for three 13-oz. packages (4.2¢).

■ — HAZEL Brand Household Cleanser (National Tea Co., Chicago). 4¢ for 14 oz. (4.6¢).

■ — CLOVER FARM Lemon Cleanser (Clover Farm Stores Corp., Cleveland). 5¢ for 14 oz. (5.8¢). Packaged in all-paper container.

■ — IGA CLEANSER (Independent Grocer's Alliance Distributing Co., Chicago). 5¢ for 14 oz. (5.8¢). Packaged in all-paper container.

■ — RED & WHITE Scouring Cleanser (Red & White Corp., Chicago). 5¢ for 14 oz. (5.8¢). Packaged in all-paper container.

■ — ROKEACH SCOURING POWDER (I. Rokeach & Sons, Inc.). 5¢ for 14 oz. (5.8¢).

■ — ROYAL LEMON CLEANSER (Royal Lemon, Inc., Minneapolis). 5¢ for 14 oz. (5.8¢).

■ — MACY'S SCOURING POWDER (R. H. Macy & Co., NYC). 5¢ for 14 oz. (6¢).

■ — OCTAGON CLEANSER (Colgate-Palmolive-Peet Co., Jersey City). 5¢ for 13 oz. (6.2¢).

■ — CRYSTAL WHITE SCOURING CLEANSER (Colgate-Palmolive-Peet Co.). 5¢ for 13 oz. (6.3¢).

■ — KIRKMAN CLEANSER (Kirkman & Son, Div. of Colgate-Palmolive-Peet Co.). 6¢ for 14 oz. (7¢).

■ — WYANDOTTE CLEANSER (Wyandotte Chemicals Corp., Wyandotte, Mich.). 9¢ for 15 oz. (9.6¢).

■ — MACY'S ENAMEL AND PORCELAIN CLEANER (R. H. Macy & Co.). 8¢ for 14 oz. (9.8¢).

■ — KAY-TEE Household Cleanser (Kay-Tee Products Co., Brooklyn). 19¢ for two 14-oz. packages (11¢).

■ — ROKOH (I. Rokeach & Sons, Inc.). 9¢ for 14 oz. (11.1¢).

■ — BABBITT'S CLEANSER (B. T. Babbitt, Inc., NYC). 10¢ for 14 oz. (11.5¢).

■ — CO-OP SCOURING CLEANSER (National Cooperatives, Inc.). 10¢ for 14 oz. (12.1¢).

■ — BAB-O (B. T. Babbitt, Inc.). 21¢ for two 14-oz. packages (13.1¢).

■ — DEXTA (Boyle-Midway, Inc., Jersey City). 19¢ for 12 oz. (26.2¢).

■ — SKOUR KAKES (Skour Kake Co., Los Angeles). 5¢ for 2⅗-oz. cake (36.3¢). Weight not stated.

Jellied Consommés

For flavor and consistency, *Campbell's* came out best

Fifteen brands of jellied soups have been scored by a CU taste panel for flavor and consistency—*consommés* (mainly gelatin, beef stock or beef extract, vegetables, tomatoes or tomato juice); *chicken consommés* (gelatin, chicken broth, fresh vegetables and artificial seasoning); *chicken consommé madrilène with wine* (mainly gelatin, chicken broth, tomatoes, wine and U. S. Certified colors); *consommé madrilène* (gelatin, tomatoes and fresh vegetables or tomato and vegetable juice, artificial seasoning and color).

The directions accompanying most of the brands called for chilling in the refrigerator for six to eight hours. But two brands, *S. S. Pierce Co.* Consommé and *Steero* Jellied Consommé, carried directions for chilling for three hours, with a word of caution about not jelling too hard. Both of these brands, however, were still liquid after three hours, and did not appear to have the right consistency until they had been chilled overnight.

All brands were tasted twice by each member of the taste panel except for *Express* Jellied Consommé Madrilène Mix, which was tasted three times. This is a dehydrated powder — and a brand that scored first in 1945. But this year, when prepared according to directions, it did not jell, and 27 out of 30 tasters considered it to be poor and flavorless. Possibly this deterioration can be accounted for by the fact that meat extract is no longer listed among its ingredients.

The cost per ounce of consommé varied from 1.1¢ to 1.9¢; of chicken consommé madrilène with wine, from 1.6¢ to 2.4¢; of consommé madrilène, from 1.4¢ to 1.5¢; of chicken consommé, from 1.4¢ to 1.8¢.

Jellied Consommés	good	fair	poor
WHITE ROSE Chicken Consommé			
CAMPBELL'S Condensed Consommé			
CRESCA Consommé			
DORSET Chicken Consommé Madrilène with Burgundy Wine & Tomatoes			
LILY WHITE Consommé Madrilène			
S. S. PIERCE CO. Consommé Chicken			
S. S. PIERCE CO. Consomme			
STEERO Consommé			
LILY WHITE Chicken Consommé			
WHITE ROSE Consommé Madrilène			
EXPRESS Consommé Madrilène Mix			
WESTCHESTER Consommé Chicken			
S. S. PIERCE CO. Chicken Consommé Madrilène with Burgundy Wine & Tomatoes			
S. S. PIERCE CO. Chicken Consommé Madrilène with Sauterne Wine & Tomatoes			
CROSSE & BLACKWELL Consommé Madrilène			

Jellied soup ratings

▶ *Listed in order of decreasing flavor score. Figures in parentheses represent cost per oz.*

Good

■ — CAMPBELL'S Condensed Consommé (Campbell Soup Co., Chicago). 16¢ for 10½ oz. (1.5¢).

■ — S. S. PIERCE CO. Jellied Consommé Chicken (S. S. Pierce Co., Boston). 21¢ for 12 fl. oz. (1.8¢).

■ — STEERO Jellied Consommé (American Kitchen Products Co., Ozone Park, N. Y.). 15¢ for 10 fl. oz. (1.5¢).

Fair

■ — WESTCHESTER Jellied Consommé Chicken (Pure Food Co., Mamaroneck, N.Y.). 17¢ for 12 fl. oz. (1.4¢). Too thin.

■ — S. S. PIERCE CO. Consommé (S. S. Pierce Co.). 19¢ for 10 fl. oz. (1.9¢).

■ — LILY WHITE Consommé Madrilène (R. H. Macy & Co., NYC). 17¢ for 12 fl. oz. (1.4¢).

■ — WHITE ROSE Jellied Chicken Consommé (Seeman Brothers, Inc., NYC). 20¢ for 12 fl. oz. (2¢).

■ — CROSSE & BLACKWELL Consommé Madrilène (Crosse & Blackwell Co., Baltimore). 17¢ for 11 fl. oz. (1.5¢). Did not jell; remained liquid even after 24 hours in the refrigerator.

■ — S. S. PIERCE CO. Jellied Chicken Consommé Madrilène with Burgundy Wine and Tomatoes (S. S. Pierce Co.). 34¢ for 14 fl. oz. (2.4¢).

Poor

■ — CRESCA Jellied Consommé (Cresca Co., NYC). 12¢ for 10½ oz. (1.1¢). Most tasters thought the consistency too thin.

■ — LILY WHITE Jellied Chicken Consommé (R. H. Macy & Co.). 19¢ for 12 fl. oz. (1.6¢).

■ — S. S. PIERCE CO. Jellied Chicken Consommé Madrilène With Sauterne Wine and Tomatoes (S. S. Pierce Co.). 34¢ for 14 fl. oz. (2.4¢).

■ — DORSET Jellied Chicken Consommé Madrilène With Burgundy Wine and Tomatoes (Dorset Foods, Ltd., Long Island City, N. Y.). 23¢ for 14 fl. oz. (1.6¢).

■ — WHITE ROSE Consommé Madrilène (Seeman Brothers, Inc.). 20¢ for 11 fl. oz. (1.8¢).

■ — EXPRESS Jellied Consommé Madrilène Mix (Express Food Corp., Long Island City, N. Y.). 97¢ for 7 oz. (2.4¢, calculated on 2 teaspoonfuls to cup of water). A dehydrated powder, makes approximately 36 servings. Did not jell when prepared according to directions. Flat and tasteless; when prepared double-strength, consistency improved, but flavor rating remained the same.

Tennis Balls

Of 12 brands tested, only *Spalding* met all United States Lawn Tennis Association standards

There has been considerable development in the technique of making tennis balls to the end of standardizing their weight, size, bounce and hardness. Results from tests of 12 different brands in CU's laboratory show that there is still much work to be done. The tests revealed variations on all counts, not only among balls made by different manufacturers, but among balls carrying the same label. And these variations were found in balls coming out of the same bag or can.

The United States Lawn Tennis Association has set up fairly rigid specifications. To meet these specifications, balls must measure between 2½ and 2⅝ inches; must weigh between 2 and 2 1/16 ounces; must bounce between 53 and 58 inches when dropped from a height of 100 inches; and must deform between 0.265 and 0.290 inches when a dead weight load of 18 pounds is applied. There, in short, are the accepted standards for a good tennis ball, the last being a measure of the ball's hardness. What you get generally approximates, but does not meet, these specifications. Experienced tennis players consider excessively hard or excessively soft balls most objectionable, with too high or too low a bounce next. Yet it is in these important characteristics that most of the balls failed to meet specifications. There is no accepted standard or method of test to determine durability of tennis balls. CU is investigating this problem.

Tennis balls are made by various methods. All, however, are made of rubber covered with a white Melton cloth, with air or some other gas, under pressure, inside the ball. And the slow escape of the gas through the rubber accounts for a good deal of the variation in performance. To overcome this factor, many brands are packed under pressure in cans, which maintains pressure within the balls, at least until the cans are opened. Others are packed in paper bags, cardboard cartons or sold loose. Results of the tests indicate that your chances of getting a set of balls which meet U.S.L.T.A. specifications are small unless you buy by can.

Canned balls are generally too hard, but tend to soften in play. Balls in other types of packing are generally too soft. On the basis of the tests, balls in bags or cartons should never be purchased.

Three or four sets of each brand (three to a set) were tested. Samples from each set were tested for bounce by 100-inch drops, with a magnetic release used to insure free dropping. Deformity under load (hardness) was tested on the official machine designated by the U.S.L.T.A. Three balls of each brand — each from a different set — were measured to the nearest 1/64 of an inch across three different diameters.

None of the balls tested deviated more than 1/32" from its average diameter. Only one brand — *Dunlop* — was consistently larger than specifications, by about 3/64 of an inch. And only one brand did not meet weight specifications. The *Firestone* bagged balls were either too light or too heavy, and the average weight of six balls tested from three different sets was too light.

In the bounce test almost all of the canned balls were considered to be satisfactory although one brand, *Lee*, was a bit too lively; and the bounce of the *Montgomery Ward* balls was low and they were too soft. When the *Ward* cans were opened, all three sets tested had much less air in them than the other brands of canned balls. Of the balls not packed in cans, one bag each of *Spalding* and *Wright & Ditson* was satisfactory, and the other two bags of each were dead. The *Higgins* balls met specifications for bounce but were too soft.

In the deformity test for hardness only balls bearing the *Spalding* name and packed in cans met specifications.

The ratings below are listed in three groups: one for balls which met specifications; one for balls which met most of the specifications; and one for balls which failed to meet the most important specifications.

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acceptable

▶ *All balls were marked as meeting United States Lawn Tennis Association specifications except where otherwise noted. The following brand met the specifications.*

■ — SPALDING (A. G. Spalding & Bros., NYC). $1.50 for can of 3 balls.

▶ *The following brands met U.S.L.T.A. specifications except that all were too hard.*

■ — PENNSYLVANIA (Pennsylvania Rubber Co., Jeannette, Pa.). $1.49 for can of 3 balls.

■ — WRIGHT & DITSON (A. J. Reach, Wright & Ditson, NYC). $1.50 for can of 3 balls.

■ — WILSON (Wilson Sporting Goods Co., Chicago). $1.49 for can of 3 balls.

■ — LEE (Harry C. Lee & Co., NYC). $1.75 for can of 3 balls.

■ — VOIT (W. J. Voit Rubber Corp., Los Angeles). $1.49 for can of 3 balls.

■ — DUNLOP (Dunlop Tire & Rubber Corp., NYC). $1.49 for can of 3 balls. Slightly larger than U.S.L.T.A. specifications.

not acceptable

▶ *The following brands did not meet most of the U.S.L.T.A. specifications.*

○ — WARD'S (Montgomery Ward). $1.49 plus postage for can of 3 balls.

○ — WILSON (Wilson Sporting Goods Co., Chicago). $1.49 for bag of 3 balls.

○ — MACY'S (R. H. Macy & Co., NYC). $1.19 for 3 balls packed loose. Ball not marked "approved by U.S.L.T.A." and marked "Made in England."

○ — FIRESTONE (Firestone Stores). $1.39 for 3 balls packed loose.

○ — HIGGINS (Sears-Roebuck). $1.49 plus postage for bag of 3 balls.

○ — WRIGHT & DITSON (A. J. Reach, Wright & Ditson). $1.50 for bag of 3 balls.

○ — DUNLOP (Dunlop Tire & Rubber Corp.). $1.50 for bag of 3 balls.

○ — SPALDING (A. G. Spalding & Bros.). $1.50 for bag of 3 balls.

○ — MUNRO MASTER (Munro Sports Inc. Utica, N. Y.). $1.47 for box of 3 balls.

Ice Cream Mixes

They vary widely, but of 13 brands tested

none made a product to equal commercial ice cream

Most people will prefer commercial ice cream to any that may be made in a refrigerator — or so CU's taste tests of 13 brands of "ice cream mixes" would indicate. Even so, good refrigerator ice cream can be made with some of the products available. So far as flavor alone is concerned, four of the brands tested — *Ten-B-Low*, *Virginia Dare*, *"Junket"* and *Ann Page Sparkle* — had the same or better average score than the commercial ice cream (*Hershey's* vanilla) used for comparison. The principal weakness of the ice cream made from mixes lay in texture and consistency.

Ingredients and method of freezing influence the size, shape and arrangement of the crystals formed, which determine, in turn, the texture and consistency of the final product. Small crystals produce a creamy mixture; large crystals give the ice cream an icy, watery texture. Ingredients like gelatin, cream, milk, gums, and the like, which permit large amounts of air to be brought into the mixture, are useful in preventing the formation of large crystals. Agitation during freezing also helps. And speed of freezing, too, has its effect — the faster the freezing, the smoother the ice cream.

But refrigerator ice cream is necessarily frozen without continuous agitation, and freezing speed is limited by the lowest temperature possible in the freezing compartment of your refrigerator. Ingredients varied, but in general they included starch, gums, sugar and flavoring. Some brands, particularly those that called for the addition of water only, also included milk solids, cream, egg and gelatin in varying amounts. Those brands that required heavy cream as the sole liquid addition were very smooth in texture; some tasters liked these very much, calling them "creamy," "smooth," "like mousse," etc. Other tasters, however, objected to them as being "buttery," "floury," etc.

About half the brands tested received, according to directions, some agitation during freezing and a second beating after the mixture was partially frozen. Directions for one brand, *Ann Page Sparkle*, were to "stir when thick but before solidly frozen . . . repeat if necessary."

Ann Page Sparkle and *Ten-B-Low* were the only brands tested that presented special difficulties in preparation. *Ann Page Sparkle*, made with a mixture of whipped heavy cream and milk, kept separating into creamy and watery layers during freezing and required repeated mixings — mixings which were not always successful in producing a creamy, homogeneous ice cream. *Ten-B-Low*, a thick, viscous liquid, was a nuisance to get out of the jar, and difficult to mix.

Some of the mixes simply require the addition of water . . .

Except for *Ten-B-Low*, all the brands tested were powders. According to the Food & Drug Administration, "The name 'ice cream powder' is not appropriate for products consisting of ingredients sometimes used as a 'stabilizer' for ice cream," since it "is not a powder that will make ice cream simply by the addition of water, which the name 'ice cream powder' suggests." Actually, such products require the addition of cream or milk. *Virginia Dare* and *Zero Freez*, both labeled "ice cream powder," fall into this category. *Londonderry*, a similar product, has been relabeled to read *"Londonderry Stabilizer* for use in making ice cream at home."

Vertrees' Frosty-Mix, *Ann Page Sparkle*, *Oz* and *"Junket,"* which were available in chocolate flavor, were tested. Of the remaining brands — all of which may be made into chocolate by adding cocoa or chocolate — *Frizz*, *Virginia Dare*, *Londonderry* and *Ten-B-Low*, the high ranking brands in the vanilla taste tests, were made up as directed for chocolate flavoring. Adding this flavor improved *Frizz* and *Londonderry*, but *Virginia Dare's* chocolate was not as good as that brand's vanilla. The flavor of *Ten-B-Low* was poor as chocolate, while *Oz*, *Ann Page Sparkle* and *Vertrees' Frosty-Mix* were about the same. *"Junket"* chocolate was poorer than vanilla in both flavor and consistency.

All but four of the ice creams made with prepared mix cost less than commercial ice cream (at 40¢ a pint). Approximate cost per pint of homemade ice cream was based on ½ pint heavy cream at 32¢; ½ pint light cream, 17¢; 1 quart milk, 18¢; a 13-ounce can of evaporated milk, 9¢; 1 pound of sugar, 10¢; 8 ounces of chocolate, 29¢; 8 ounces of cocoa, 14¢; ½ ounce of vanilla, 12¢.

. . . others call for sugar, cream or milk, even flavoring

How CU tested

The ice creams were prepared and frozen according to the directions given on the package. Where two or more sets of directions were given, the "richest" was used. For example, if the directions called for heavy cream, light cream, or evaporated milk, the heavy cream recipe was used. Three samples, identified by number, were served simultaneously to each member of CU's 18-man taste panel. Tasters rated samples individually for flavor (good, fair or poor), consistency (good, fair or poor), and comparison with commercial ice cream.

After all brands had been scored, the four ranking highest in flavor and consistency were made up and served with commercial ice cream. This series of five was served twice. Tasters rated these for flavor and consistency, and numbered them in order of preference. The commercial ice cream got 15 firsts; *Frizz*, *Virginia Dare* and *Londonderry*, its closest rivals, got four or five.

Ice cream mix ratings

▶ *Ratings are listed in order of over-all quality, based on preference as to taste and consistency. Figures in parentheses represent approximate cost per pint, based on the recipes used in these tests.*

Vanilla or vanillin flavor

best buys

▶ *The following were judged to give the best value for the money in the order listed.*

■ ■ — VIRGINIA DARE Flavored Ice Cream Powder (Virginia Dare Extract Co., Brooklyn). 10¢ for ½ oz. of powder (27¢). Good flavor and consistency. Required addition of light cream and sugar. Two beatings.

■ ■ — oz Ready Mix for Ice Cream, Vanillin Flavor (Homix Products, Inc., NYC). 29¢ for 5 oz. of powder (24¢). Fairly good flavor and consistency. Required addition of water only. Two beatings.

■ ■ — FRIZZ Ice Cream (Kraft Foods Co., Chicago). 31¢ for 3½ oz. of powder (24¢). Fairly good flavor and consistency. Required addition of water and sugar. Two beatings.

acceptable

▶ *Listed in order of quality — flavor and consistency — without regard to price.*

■ ■ — VIRGINIA DARE (see "Best Buys").

■ — "JUNKET" Freezing Mix, Vanillin Flavor (Chr. Hansen's Laboratory, Inc., Little Falls, N. Y.). 11¢ for 4 oz. of powder (32¢). Good flavor, fairly good consistency. Required addition of light cream. One beating.

■ — ANN PAGE SPARKLE Mixture for Ice Cream Dessert, Vanilla Flavor (A&P, NYC). 19¢ for three 4½-oz. packages of powder (30¢). Required addition of milk and heavy cream. Good flavor, fairly good consistency. Mixture separated while freezing and required repeated mixing.

■ ■ — oz (see "Best Buys").

■ — LONDONDERRY (Londonderry, San Francisco). 15¢ for 3 grams (68¢). Fairly good flavor and consistency. Required addition of heavy cream and sugar. One beating.

■ ■ — FRIZZ (see "Best Buys").

■ — ZERO FREEZ Flavored Ice Cream Powder (I. Kalfus Co., NYC). 10¢ for 12 grams (6¢). Fair flavor, fairly good consistency. Required addition of evaporated milk and sugar. One beating. Most tasters objected to the evaporated milk taste.

■ — TEN-B-LOW (Ten-B-Low Co., Columbus, Ohio). 27¢ for 10 oz. of concentrated liquid (22¢). Good flavor, poor consistency. Required addition of water and vanilla. Two beatings. Sticky, viscous liquid was difficult to mix with water.

■ — VERTREES' FROSTY-MIX Vanilla (Vertrees Mfg. Co., Louisville). 10¢ for 4½ oz. of powder (33¢). Fairly good flavor and fair consistency. Required addition of heavy cream and milk. One beating.

■ — ZIP-FREEZE Frozen Desserts Vanilla-Vanillin (Albulac Co., Chicago). 10¢ for 1 oz. of powder (49¢). Fair flavor and consistency. Required addition of heavy cream, sugar and vanilla. Two beatings.

not acceptable

○ — FREEZ-MIX Vanilla Flavored (Dietetic Food Co., Brooklyn). 30¢ for 1½ oz. (50¢). Very poor flavor and fair consistency. Required addition of heavy cream. One beating. Contained saccharin.

○ — RIPPEY'S FOAMOLINE (William Rippey, Cincinnati). 17¢ for 7 oz. of powder (28¢). Poor flavor and very poor consistency. Required addition of light cream, sugar and vanilla. One beating.

○ — SUMMER TREAT Ice Cream Mix (Karol Kay, NYC). 35¢ for 4 oz. of powder (51¢). Very poor flavor and consistency. Required addition of water only. Two beatings. Product was lumpy, caked and difficult to mix.

Chocolate flavor

▶ *Comments given for vanilla flavored brands apply to the following. Unless otherwise noted, the chocolate flavored brands cost the same as vanillas of the same brand.*

best buys

■ ■ — FRIZZ Ice Cream (Kraft Foods Co., Chicago). (28¢.) Fairly good flavor and good consistency. Required addition of chocolate.

■ ■ — VIRGINIA DARE Flavored Ice Cream Powder (Virginia Dare Extract Co., Brooklyn). (27.5¢.) Fairly good flavor and consistency. Required addition of cocoa.

■ ■ — oz Ready Mix for Ice Cream, Chocolate Flavor (Homix Products, Inc., NYC). (24¢.) Fair flavor and good consistency. Contained cocoa.

acceptable

■ ■ — FRIZZ (See "Best Buys").

■ — LONDONDERRY (Londonderry, San Francisco). (69¢.) Fairly good flavor and good consistency. Required addition of cocoa.

■ ■ — VIRGINIA DARE (see "Best Buys").

■ — VERTREES' FROSTY-MIX Chocolate (Vertrees Mfg. Co., Louisville). 15¢ for 4½ oz. (37¢.) Good flavor, fair consistency. Contained "pure chocolate flavor."

■ ■ — oz (see "Best Buys").

■ — ANN PAGE SPARKLE Mixture for Ice Cream Dessert, Chocolate Flavor (A&P, NYC). (30¢.) Fairly good flavor, fair consistency. Contained cocoa, sweet chocolate.

■ — "JUNKET" Freezing Mix, Chocolate Flavor (Chr. Hansen's Laboratory, Inc., Little Falls, N. Y.). (32¢.) Fair flavor, poor consistency. Contained cocoa.

not acceptable

○ — TEN-B-LOW (Ten-B-Low Co., Columbus, Ohio.) (20¢.) Poor flavor and consistency. Required addition of cocoa.

After about ten minutes of preparation, you are ready to pour mixture into the MI Rapid Freezer; *turn crank for a minute, and you get the creamy mixture shown below.*

One Minute Freezer

The *MI Rapid Freezer* makes better ice cream than a refrigerator does, and makes it much faster — but you still need ice, salt, and $19.95

Do you want rich, delicious homemade ice cream on your picnic? Then take along the six-pound, $19.95 *MI Rapid Freezer* and "make ice cream right on the spot." And don't forget a few pounds of ice, salt, and the ingredients. To keep the ice from melting until you're ready to make the ice cream — well, that's your problem.

If the *MI Rapid Freezer* seems a rather questionable adjunct to a picnic, its use at home can be quite practical, especially if commercial ice cream is not readily available, and if you want your ice cream right away. You still have to have ice, salt, and the necessary ingredients, but that's easier at home. The actual freezing time for a pint of mix is indeed very short — from one to five minutes. And a wide variety of frozen desserts can be made with this freezer. A recipe book that accompanies it contains directions for about 30, ranging from biscuit tortoni to frozen fruit juices.

No paddle to lick

The *MI Rapid Freezer's* operating principle is just the reverse of that of the old-fashioned paddle freezer. You still have to turn a crank, but instead of having a large volume of ice cream mix surrounded by ice and salt, a large volume of ice and salt is surrounded by a thin layer of ice cream. And therein lies the secret of the freezing speed.

The appliance, constructed almost wholly of aluminum, consists of a compartment into which fit a large drum in plastic bearings, a scraper and a small tray into which the frozen mixture is scraped. A cover with a hinged door fits over the arrangement.

Preparing the mix and the freezing drum takes longer than the actual freezing. The mix must first be made, then put in the refrigerator to chill. The plastic bearings must be soaked in cold water, and the drum wiped clean and dry. Next, the drum is filled with ice and salt (about six pounds of ice and two cups of salt per filling), sealed, the plastic bearings put on, and the whole fitted into the large tray. The scraper and small tray are then placed in position, and you are ready to go. All of this takes ten minutes or so.

Now pour a cup and a half to two cups of chilled mix on the drum, put on the cover and turn the drum for a minute (the turning is very easy). Lift up the door and

look at the mixture. If it is not quite frozen, turn for another half minute or so — but do not freeze too hard, or you will have difficulty scraping the ice cream from the drum into the tray. In fact, if you overfreeze so much that the scraper will not remove the mix, you will have to defrost by removing the ice and salt — a messy job and quite likely to contaminate the cream with the salt. Underfreezing, on the other hand, will give you a "soupy" ice cream.

How it tested

CU technicians tested the *MI Rapid Freezer* with two mixes requiring the addition of water only, and two mixes requiring addition of cream and milk. Directions accompanying the freezer called for increasing by one-half whatever liquid content was specified on the package of mix.

With one and a half cups of water — instead of one — for *Frizz* and *Oz*, the ice cream had a thin, watery flavor. Consistency, however, was good — smooth and with no ice crystals.

The mixes which required addition of cream and milk — *"Junket"* and *Ann Page Sparkle* — had directions for use in a hand freezer, which were used in testing the *MI Rapid Freezer*. The resulting ice cream had good flavor and consistency. However, wastage — the amount left unfrozen in the bottom of the appliance — was always about two fluid ounces.

The recipe book included directions for using *MI Rapid Freeze*, a mix prepared especially for use with *MI Rapid Freezer*. But CU shoppers reported that *MI Rapid Freeze* had not been put on the market as yet. Nor were they able to find out if or when it would be available.

It has its uses

To sum up: *MI Rapid Freezer* is a handy gadget to have if you want ice cream in a hurry and there's no store around the corner. It is also handy if you want to make flavors that are not readily available.

It is useful, too, in country places where ice cream is not readily available or must be carried long distances and kept in a refrigerator until used. And it turns out ice cream with much better consistency than refrigerator-made ice cream has. Whether it's worth $19.95, and the bother of preparation, are matters for the individual buyer to decide for himself.

Correction

The price of the Sears-Roebuck Silvertone *radio (Cat. No. -7117) given in the AM-FM radio ratings in the June* Reports *was misprinted as $814.50. The correct price is $184.50, plus shipping charges.*

Canned Peas

Eighty-six brands have been examined for CU by U. S. Department of Agriculture graders; herewith a report on their findings

Of 86 brands of canned peas examined by U. S. Department of Agriculture graders for CU, 17 were found to be Grade A, 37 were Grade B, 16 Grade C, and 5 Off-Grade or Substandard. Eleven brands varied too much from can to can to be classified as to grade, and could only be described as variable.

Twenty-one of the 86 brands were tested also in 1944. Generally speaking, the quality of most of these brands has not changed. There were only four brands, however, that showed no increase in price. In 1944, with price no indication of quality, a No. 2 can of peas (one pound, four ounces) sold for 11¢ to 25¢. Today the price of a No. 2 can of peas ranges from 12¢ to 35¢, with almost all of the Grade C, Variable and "Not Acceptable" brands costing 20¢ or less. The greatest price increases came on the Grade A or B brands — sometimes as high as 8¢ a can — with smaller increases — 1¢ to 3¢ per can — for the other brands.

But there are indications that prices for canned peas may go down soon. Last year's pack was the largest on record. Now, with a fairly heavy carry-over from that pack and a new pack coming in, stocks probably will be large enough to force prices down somewhat.

Canned peas, and especially the liquor in which they are packed, are a source of minerals, and of vitamins — A, B complex, and C. So, in spite of what it may say on the can, don't boil off the liquor. Heat the peas as quickly as possible and save the liquor for soups, sauces or to mix with other vegetable juices for vegetable cocktail.

Types and sizes

Peas for canning purposes should be of a productive, hardy variety, and one in which all the pods on the vine ripen uniformly. Two types fulfill these requirements: the early smooth-seeded varieties, and the later sweet, wrinkled-seeded varieties. The former may be labeled Alaska, June, Early June, or Early; the peas are smooth, round, retain their shape during canning, and may be slightly starchier than the other varieties. The latter may be labeled Sweet, Sweet Wrinkled, or Sugar. They are slightly oval in shape, and have a sweet flavor.

Peas are packed by size — either uniformly or mixed — and by variety. Although different sizes of the same

type may be packed together, the two types are never mixed.

The quality of canned peas depends mainly on their tenderness. A pea is the seed of a plant, and as such its tenderness is largely determined by its degree of maturity. It changes very rapidly from a tender-skinned "newborn" stage, rich in dissolved sugars, to a tough-skinned, mealy, fully-mature seed, supplied with a concentrated store of starch for the nourishment of the embryo plant within it. A fully mature pea, therefore, is starchy, tough, hard to digest and, all things considered, hardly edible.

How peas are graded

Since tenderness and sweetness are so closely related to maturity, the U. S. Department of Agriculture allots 45% of its total grading score to the "degree of maturity" factor.

The appearance of the contents of the can counts for 30% of the total score. The rest of the score is divided between uniformity of color (15%) and clearness of liquor (10%). The latter is indirectly related to maturity, since the high starch content of mature peas tends to produce cloudiness in the liquor.

In most cases, four cans of each brand (two or more different packer's codes) were rated and the rating determined by the average. Grade A peas were very tender, free from defects, uniform in color and packed in practically clear liquor. Grade B peas were reasonably tender and free from defects, had a reasonably uniform color, and were packed in reasonably clear liquor. Grade C peas were starchy or nearly mature, fairly free from any defects, variable in their color, and packed in cloudy liquor.

All but the last four brands listed under the Grade C heading would have been Grade B except that the peas were nearly mature. According to U. S. Department of Agriculture standards, no can of peas which is Grade C in maturity may be graded higher than that, even if all the other factors rate Grade A or B and the total score is higher than Grade C.

Save the vitamins

Don't throw away or boil off the liquor in which peas are packed: it contains minerals and vitamins — A, B complex, C. If liquor is cloudy, peas are probably mature and tough

Canned peas ratings

▶ *Ratings are in order of decreasing average score within each group. Differences between adjacent brands are very small. Price is average price paid for a No. 2 (1 lb., 4 oz.) can unless otherwise noted.*

best buys

■ ■ — SWEET LIFE Sifted Sweet Peas (Sweet Life Food Corp., Brooklyn). 20.5¢.

■ ■ — G. L. F. Sweet Peas (Cooperative G. L. F. Farm Products, Inc., Ithaca, N. Y.). 21.5¢.

■ ■ — TRUPAK Sweet Peas (Haas Brothers, San Francisco). 22¢.

■ ■ — GRAND UNION Early June Peas (Grand Union Co., NYC). 23¢.

■ ■ — SUGAR BELLE Sweet Peas (Regent Canfood Co., San Francisco). 19.5¢.

acceptable

Grade A

■ — RED LABEL Small June Peas (S. S. Pierce Co., Boston). 30¢.

■ ■ — SWEET LIFE Sifted Sweet Peas (see "Best Buys").

■ — FINAST Sweet Peas (First National Stores, Inc., Somerville, Mass.). 25¢.

■ ■ — G. L. F. Sweet Peas (see "Best Buys").

■ — KRASDALE Sweet Peas (Krasdale Foods, Inc., NYC). 31¢.

■ — WHITE ROSE Early June Peas (Seeman Bros., Inc., NYC). 31¢.

■ — ECCO Sweet Peas (Stop & Shop Super Markets, Boston). 25¢.

■ — EL LEON Sweet Peas (S. S. Pierce Co.). 26¢.

■ ■ — TRUPAK Sweet Peas (see "Best Buys").

■ ■ — GRAND UNION Early June Peas (see "Best Buys").

■ ■ — SUGAR BELLE Sweet Peas (see "Best Buys").

■ — BOHACK'S BEST Sweet Peas (H. C. Bohack Co., Brooklyn). 21.5¢.

■ — HUNT's Sweet Peas (Hunt Foods, Inc., San Francisco). 20¢.

■ — KITCHEN GARDEN Sweet Peas (Grand Union Co., NYC). 20¢.

■ — SNIDER'S Sweet Peas (Birds Eye-Snider, Inc., NYC). 22¢.

■ — RELIABLE Sweet Peas Grade A (A&P, NYC). 20¢.

■ — CO-OP U. S. Grade A Sweet Peas (Consumers Cooperative Assoc., North Kansas City, Mo.). 22¢.

Grade B

■ — PALMDALE Sweet Peas (S & W Fine Foods, Inc., San Francisco). 27¢.

■ — PETER-PAN Sweet Peas (J. B. Inderrieden Co., Peter Pan, Inc., subsidiary, Chicago). 19¢.

■ — S AND W Early June Peas (S & W Fine Foods, Inc.). 29¢.

■ — CO-OP Grade A Sweet Peas (National Co-operatives, Inc., Chicago). 23¢.

■ — LILY OF THE VALLEY Sweet Peas (Birds Eye-Snider, Inc.). 20¢.

■ — GREEN LABEL Sweet Peas (S. S. Pierce Co.). 28¢.

■ — GREEN GIANT Sweet Peas (Minnesota Valley Canning Co., Le Sueur, Minn.). 22.5¢.

■ — MARY DUNBAR Early June Peas (Jewel Food Stores, Chicago). 23¢.

■ — RED & WHITE Sweet Peas (Red & White Corp., Chicago). 22¢.

■ — ISLAND MANOR Sweet Peas (H. C. Bohack Co.). 20.5¢.

■ — PREMIER Sweet Peas (Francis H. Leggett & Co., NYC). 24.5¢.

■ — RED & WHITE Early June Peas (Red & White Corp.). 22¢.

■ — CLOVER FARM Sweet Peas (Clover Farm Stores Corp., Cleveland). 20¢.

■ — CLOVER FARM Early Peas (Clover Farm Stores Corp.). 32¢.

■ — FARMDALE Sweet Peas (American Stores Co., Philadelphia). 16¢.

■ — FELLSWAY Sweet Peas (First National Stores, Inc.). 17.5¢.

■ — KROGER'S COUNTRY CLUB QUALITY Sweet Peas (Kroger Grocery & Baking Co., Cincinnati). 19¢.

■ — LILY WHITE Sweet Peas (R. H. Macy & Co., NYC). 21¢.

■ — ROYAL SCARLET Sweet Peas (R. C. Williams & Co., NYC). 26¢.

■ — ASCO Grade A Early Peas (American Stores Co.). 24¢.

■ — GREEN VALLEY Sweet Peas (Green Valley Food Products, Inc., Milwaukee). 20¢.

■ — LIBBY'S Sweet Peas (Libby, McNeill & Libby, San Francisco). 22.5¢.

■ — NATION WIDE Sweet Peas (Nation-Wide Service Grocers, Brockton, Mass.). 20¢.

■ — MONARCH Sweet Peas (Reid, Murdoch & Co., Chicago). 26¢.

■ — DELLFORD Early June Peas (Middendorf & Rohrs, NYC). 32.5¢.

■ — GERBRO Sweet Peas (Gerber Bros., Brooklyn). 24¢.

■ — P AND G Sweet Peas (Paxton & Gallagher Co., Omaha). 24¢.

■ — WINDBROOK Sweet Peas (Elm Farm Foods Co., Boston). 14.5¢.

■ — ELM FARM Sweet Peas (Elm Farm Foods Co.). 21¢.

■ — LARSEN'S FRESHLIKE Sweet Peas Vacuum Packed (Larsen Co., Green Bay, Wis.). 22.5¢ for 14.5 oz.

■ — IGA Pod Run Sweet Peas (Independent Grocers' Alliance Distributing Co., Chicago). 20¢.

■ — ROSE-DALE Sweet Peas (Libby, McNeill & Libby). 18.5¢.

■ — CHERRY VALLEY Early June Peas (Jewel Food Stores). 15¢.

■ — CO-OP U. S. Grade B Sweet Peas (Consumers Cooperative Assoc.). 18¢.

■ — CO-OP Grade B Sweet Peas (National Co-operatives, Inc.). 18.5¢.

■ — MISSION Sugar Peas (California Packing Corp., San Francisco). 13¢.

■ — PACIFIC Early June Peas (A&P). 18¢.

Grade C

▶ *The following were Grade C because of maturity.*

■ — SUNBEAM Early June Peas (Francis H. Leggett & Co.). 19¢ to 27¢.

■ — SULTANA Grade B Early June Peas (A&P). 18¢.

■ — CO-OP Sweet Peas Grade C (National Co-operatives, Inc.). 15¢.

■ — IGA Garden Run Sweet Peas (Independent Grocers' Alliance Distributing Co.). 18¢.

■ — CO-OP U. S. Grade C Early Variety Peas (Consumers Cooperative Assoc.). 16.5¢.

■ — YACHT CLUB Sweet Peas (Reid, Murdoch & Co.). 24¢.

■ — KROGERS' BIG K BRAND Early Variety Peas (Kroger Grocery & Baking Co.). 13¢.

■ — ELMDALE Sweet Peas (National Retail-Owned Groceries, Inc., Chicago). 18¢.

■ — VALLEY GREEN Early June Peas (American Stores Co.). 15¢.

■ — YELLOWSTONE Early June Peas (Paxton & Gallagher Co.). 20.5¢.

■ — NATION WIDE (Red Label) Early June Peas (Nation-Wide Service Grocers). 17¢.

■ — KROGER'S AVONDALE QUALITY Sweet Variety Peas (Kroger Grocery & Baking Co). 15¢.

■ — AMERICAN HOME Early June Peas (National Tea Co., Chicago). 14.5¢.

■ — BLACKBIRD Early June Peas (H. P. Lau Co., Lincoln, Neb.). 20.5¢.

■ — PHILLIPS DELICIOUS Early June Peas (Phillips Packing Co., Cambridge, Md.). 15¢.

■ — HURLOCK Grade C Sweet Peas (American Stores Co.). 13.5¢.

Variable in grade

▶ *The following brands were variable from can to can. Note comments. Listed in alphabetical order.*

■ — ASCO Grade A Sweet Peas (American Stores Co., Philadelphia). 19¢. One can Grade A, 2 cans Grade B, 1 can Grade C because of maturity.

■ — CO-OP Sugar Peas Vacuum Packed (Eastern Co-operative Wholesale, Inc., NYC). 19¢ for 14.5 oz. Three cans Grade B, 3 cans Grade C because of maturity, 1 can Off-Grade (Grade D) because of maturity.

■ — DEL MONTE Early Garden Sugar Peas (California Packing Corp., San Francisco). 18¢. One can Grade A, 2 cans Grade B, 1 can Grade C because of maturity.

■ — FRESHPAK Sweet Peas (Grand Union Co., NYC). 18¢. Three cans Grade A, 1 can Off-Grade (Grade D) because of excessive defects.

■ — GARDENSIDE Sweet Peas (Regent Canfood Co. and Table Products Co., San Francisco). 12.5¢. One can Grade B, 1 can Grade C because of maturity and 2 cans Off-Grade (Grade D) because of maturity.

■ — HIGHWAY Sweet Peas (Regent Canfood Co., San Francisco). 17¢. One can Grade A, 2 cans Grade B, 2 cans Grade C because of maturity.

■ — IONA Sweet Peas Grade C (A & P). 12.5¢. One can Grade B, 1 can Grade C because of maturity, 2 cans Off-Grade (Grade D) because of maturity.

■ — KOUNTY KIST Sweet Peas (Minnesota Valley Canning Co., Le Sueur, Minn.). 18¢. One can Grade A, 1 can Grade B, 2 cans Grade C because of maturity. Label states "nearly mature large sweet peas."

■ — RIALTO Sweet Peas Grade C (Grand Union Co.). 15¢. Two cans Grade A, 1 can Grade B, 1 can Grade C because of maturity.

■ — STOKELY'S Honey Pod Sugar Peas (Stokely-Van Camp, Inc., Indianapolis). 23¢. Two cans Grade A, 1 can Grade B, 1 can Grade C because of maturity.

■ — YELLOWSTONE Sweet Wrinkled Peas (Paxton & Gallagher Co., Omaha). 16¢ to 23¢. Two cans Grade B, 1 can Grade C because of maturity, 2 cans Off-Grade (Grade D) because of maturity.

not acceptable

▶ *The following brands were Off-Grade (Grade D) because of maturity. Listed in alphabetical order.*

○ — CASTLE HAVEN Early June Peas (Phillips Packing Co.). 12¢.

○ — COME AGAIN Early June Peas (National Tea Co.). 12.5¢.

○ — HURLOCK Early June Peas Grade C (American Stores Co.). 13.5¢.

○ — NATION WIDE (Blue Label) Early June Peas (Nation-Wide Service Grocers). 15¢.

○ — SHORE VIEW Early June Peas (H. C. Bohack Co.). 14.5¢.

Tractors vary greatly in performance; it's up to the buyer to choose the kind he needs for the jobs he wants to do

Smallest machines may be too fast for close cultivating; bigger ones run slower

Small Tractors for Big Gardens

They can't do heavy plowing, but they're versatile tools; and some good ones are available

A well-selected garden tractor can take the drudgery out of a big vegetable garden and, on country places of a half acre or more, solve many a maintenance problem as well. Depending in part on the attachments that come with them, these tractors can be kept busy the year around, with a variety of tasks: cultivating, furrowing, seeding, removing light snow, hauling, mowing lawns, haying, and doing some grading jobs of a light variety.

When the time for preparing soil arrives, some means of plowing is practically a prime necessity. But unfortunately no garden-size tractor can do this heavy work. Good moldboard plowing or disc harrowing requires more power than any garden tractor has, and the great majority of experts consider that the deeply pulverized soil produced by rotary equipment is not favorable to plant growth.

Trials in Alabama

Manufacturers and enthusiastic owners of rotary equipment naturally resent this judgment. To settle the controversy, trials are under way this year in Alabama to test the comparative merits of conventional and rotary soil preparation, as measured by crop performance. When the results are published, we may change our advice.

However, some people whose gardens are too large to dig over by hand still have to prepare the soil themselves. For them we present the following facts. If the soil is light and mellow, a four- or five-horsepower trac-

A few good tractors

▶ *In the list below, all prices are f.o.b. except as indicated. All except the* Gravely *Model D come equipped with rubber tires. Except where otherwise indicated, the operator walks behind the tractor.*

One and a half horsepower

SUPER-HUSKI POWER-HO (Bolens Products Co., Port Washington, Wis.). $165; cultivator, $18 extra. Clearance 13 inches. Adjustable tread, 16 and 21 inches. Speed, 1¾ to 3 mph. Not quite as well-balanced as the *Planet Jr.*, and did not allow the operator to see as far ahead on the row, but well-liked by many truck farmers.

Attachments (good); one-row seeder, $31.60; 30-inch field mower, $83.45; snow plow or light grader, $39; no lawn mower listed.

PLANET JR. BP-1 (S. L. Allen & Co., North Philadelphia, Pa.). $190.50, including one-row cultivator. Clearance low (9¾ inches). Adjustable tread, 14 and 24 inches. Speed, 1½ to 3½ mph. Good tools, easily changed. Very well balanced, durable, convenient. Except for the low clearance, this tractor seemed better than the *Super-Huski* above.

Attachments: one-row seeder, $34.75; 34-inch field mower, $57.50; 18-inch lawn mower, $41.25; hitch for own hand mower, $6.25; snow plow, no quotation.

ROTO-ETTE (Rototiller, Inc., Troy, N. Y.). $337.50. A one-wheel rotary tiller, equipped for tilling or cultivating 14 or 19 inches wide; $337.50 with 25-inch power lawn mower; $306.90 with 30-inch field mower. Conversion units: 25-inch lawn mower, $104.50; 30-inch field mower, $92.40; tilling (or cultivating) unit $104.50. Lawn mower was not controlled separately, so it had to turn whenever the machine moved. Cultivated well, but for only two widths of row. Well-made, with 2-speed transmission, adjustable handle which permits walking at one side, power take-off, and good attachments.

Attachments: 30-inch snow plow, either V or bulldozer type, $18.50; furrower, $5.50; trailer, $75.

Two to three horsepower

GRAVELY Model D, 2 hp. (Gravely Motor Plow & Cultivator Co., Dunbar, W. Va.). One-wheel tractor. $249.90 without attachments; delivered price in the Northeast, about $259.90. Comes with a steel wheel, but a rubber-tired wheel is available. Speed, 1 to 3 mph, throttle-controlled. Independent clutch for attachments. Designed especially for narrow-row cultivating, and for mowing along steep hillsides.

Attachments: tool holder $20, and a variety of cultivating steels; 42-inch field mower, $78.75; fertilizer distributor, $38; 2-row seeder, $64; lawn mower, no price listed.

HUSKI-GARDENER 2¾ hp. (Bolens Products Co.). $310 without attachments. Clearance, 17 inches. Adjustable tread, 16, 18½,

tor can do a fair job of moldboard plowing with a ten-inch plow, though it will not cover garden trash or tall cover crops well, or operate satisfactorily in sod. Rotary equipment, which mixes garden trash with the soil instead of covering it, can go over the ground a second time if the first cut is not deep enough. For tough conditions, a five-horsepower tractor is required. In soil containing many large stones, the *Gravely* rotary plow probably is better than a rotary tiller, in which the tines may be bent. Unfortunately, furrowing and seeding equipment is liable to run into and drag along garden trash which is mixed through the soil in rotary soil preparation. Before planting, the soil should be settled by watering or rolling. The *Rototiller* has a roller attachment for doing this.

Tractors vary greatly in convenience, versatility, ease of handling, precision of work, and durability. No tractor is best for every operation. The prospective buyer should know what the major operation is to be, and choose the size and make of tractor which does that operation best.

The smallest (1½ horsepower) machines, including the rotary tiller, *Rotto-Ette*, are good for cultivating, furrowing, seeding, plowing light snow, hauling a small cart and mowing fairly level lawns. Their field mowers do not cut thick stands of hay well. They are liable to fall over if driven along a slope. Good ones are easily handled after you become used to them, but their lowest speed is so fast that the use of the knife-like "sweeps" for close cultivating is inadvisable.

Larger sizes

Larger tractors (two to four horsepower) are heavier and harder to handle, but they have more power, and their low speed is slow enough for precise work. They can cultivate three or four rows at once, operate fertilizer placement distributors, mow a lawn up a slope or draw three or four lawn mowers, cut hay — but not thick stands — better than the smallest models, and have more power for pushing snow and doing light grading. On a slope, they may be top-heavy. Some have power take-offs for small power jobs.

Large garden tractors (four to five horsepower) do not cultivate any better than the next smaller size, but they do a greater variety of jobs, have more power for hard conditions, and more engineering refinements. Besides doing the usual operations, they have attachments for dusting and spraying, and can cut hay well. All of them have power take-offs.

Get a demonstration

Many new manufacturers have entered the business, and some of them may survive. But others will fail, leaving tractor owners in the lurch for service and parts. Before making a purchase, a demonstration on your own property, doing the operation which is most important to you, is very desirable, but many dealers in a sellers' market do not give demonstrations. Under these circumstances, the consumer can but concentrate on one of the following best makes, limiting his choice to those which have good repair service in his community.

The best makes among conventional type adjustable-tread tractors are *Planet Jr.*, *Bolens*, *David Bradley* (Sears-Roebuck), and the *National Farm Machinery Cooperative;* among rotary tillers, the *Roto-Ette* and *Roto-*

Continued on next page

21, and 24 inches. Adjustable offset handles, for walking at one side when operating. Power steering. Speed, ⅜ to 4 mph, throttle-controlled. Has a tool lift, and tools are quickly changed.

Attachments: cultivators, $20 for garden-type tools; $26 for convenient expanding-lever field type; seeders; fertilizer distributors; snow plow, $44; field mower, $88.70; no lawn mower.

PLANET JR. HB 3 hp. (S. L. Allen & Co.). $405 without attachments. Clearance, 16 inches. Adjustable tread, 14½, 16, 18½, 20 inches. Adjustable, offset handles, easy steering. Speed, ½ to 3 mph. Excellent tools, quickly changed, and accurately controlled.

Attachments: a variety of cultivating, fertilizing, and seeding equipment is available. 46-inch field mower $139.25; no lawn mower.

Four to five horsepower

PLANET JR. HT 4½ hp. (S. L. Allen & Co.). $435 without attachments. Like the *HB* model except for a more powerful engine, which enabled it to do more and harder jobs. Could pull a 9- or 10-inch plow ($35) under favorable conditions. Popular with truck farmers.

Attachments: interchangeable with the *HB*, included dusters and sprayers, and a belt pulley for power jobs.

GRAVELY Model L, 5 hp. (Gravely Motor Plow & Cultivator Co.). $299.25 without attachments; delivered price in the Northeast, about $309. Tread not adjustable, except by use of an extension axle ($15.75). Two forward speeds and reverse: low, ¼ to 3 mph; high, 1 to 6 mph, throttle-controlled. Automotive type differential. Safety slip clutch for each power attachment.

This tractor is notable for its performance of special jobs, and we consider it a "Best Buy" for owners of a half acre or more, if cultivating is not the major operation. Deliveries exceedingly slow.

Attachments (most attachments mounted on front): Rotary plow, $63; 42-inch field mower (even cuts heavy brush), $78.75; 48-inch hay rake, $47.25; snow plow or grader, $42; power take-off and pulley, $15.75; and a variety of cultivating tools. Also a 30-inch power lawn mower, cuts ½ to 4 inches high; an excellent 50-gallon power sprayer; a water ballast roller; riding sulky; and transportation cart; prices for these attachments were not listed.

ROTOTILLER 5 hp. (Graham-Paige Motors Corp. Farm Equipment Div., Willow Run, Mich.). $484.50 without reverse gear; $534.50 with reverse. This powerful, well-built rotary tiller is most popular with nurserymen and florists.

Attachments: snowplow or bulldozer, $22; seeder or planter, $58.50; furrower, $10; roller, $50; belt pulley, $25; cultivator, $25; mower bar and power take-off, $115; water-pump, universal power base, $110.

tiller; the *Gravely,* which mounts most of its tools in front, is a type in itself.

The *National Farm Machinery Coop's* tractor is sold out through 1948, and the *David Bradley* is not offered this year. Montgomery Ward's tractor is the *Simplicity,* not available, and only fairly good. The widely advertised Shaw *Peppy Pal* and *Du-All,* and the *Bear* and other caterpillars are decidedly inferior.

Garden tractors were first designed as seeders and cultivators for truck farmers, and the conventional type are still best adapted to this kind of work, although they have mower and other attachments also. The *Gravely* Model D is specially designed for narrow-row cultivating. The *Gravely* Model L and the *Roto-Ette* are not as flexibly adapted to cultivating various widths of rows as the above, but they have better special equipment such as power mowers.

Make sure the tractor you buy has:

Good clearance in two-wheel tractors. Fourteen to 18 inches is desirable for working over tall plants.

Adjustable tread for various row widths. Determine the row widths to which the tractor and cultivator may be adjusted, because you must plan the row spacing to suit the tractor. Rows can be 10, 20, or 40 inches apart if the wheels are set at 20-inch centers, or in multiples of 12 or 14 inches with the wheels at 24- or 28-inch spacing.

Ability to work on sidehills, if you need it.

Rubber tires, best on most surfaces. They cut the sod or cultivated surface less than steel wheels, make for lower fuel consumption, stir the dust less, make the tractor more versatile, and give it a longer life.

Enough power for the work you require.

A good 4-cycle engine with oil-bath air filter, except on rotary tillers. *Briggs & Stratton* is a good brand of engine, but a scarce one.

A slow forward speed, or an engine which can be idled down and still do good work without stalling.

Reverse speed. Very desirable, especially on the heavier models.

Differential or independent clutch for the attachments.

Tractor balance. Very important for ease in handling. To try it, lift the handles, with cultivator attached.

Easy and quick steering control.

Provision for regulating the depth of the tools and raising them from the ground.

Easy and short turning.

Power take-off.

Mower attachment. Lawn mowers with power-driven reels are best.

Egg Beaters

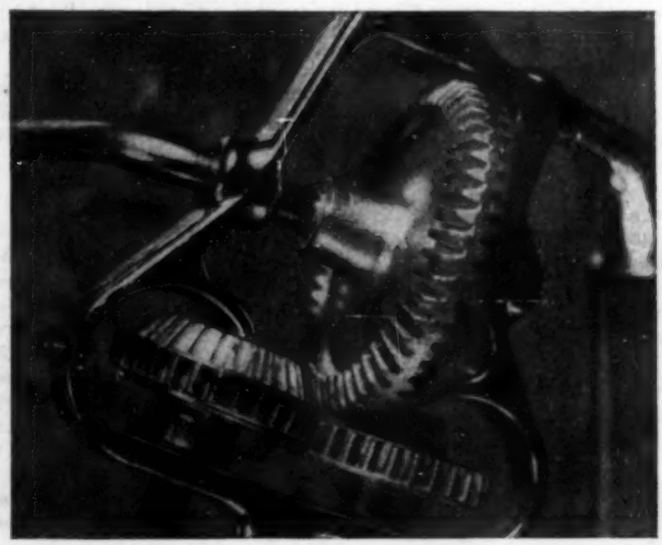
The 14 brands tested included two-speed, one-speed and one-hand beaters, plus an electric model. The two-speed jobs were best

Using a mechanical egg beater to whip cream, beat egg whites or mix cake batter, is a tiring operation at best. Electric mixers, of course, take jobs of this sort in their stride (*Reports,* April). But an electric food mixer is an expensive item, worthwhile only if you have a good deal of use for it and if it is always accessible.

The 14 beaters tested by CU included ten conventional rotary-type beaters, of which the *Worlbeater* at $1.98 and *Maynard* at about $2.50 ranked highest in the tests. Each of these had two speeds: a normal one for beating eggs and mixing light batters, and a lower speed for mixing heavy batters.

Besides the rotary beaters, CU tested three other mechanical types — the *One-Hand-Wip, Boun-c-Beater* and *Speedy-Chef,* all constructed, but rather badly, for one-hand operation — and the portable, electric *Gilbert Whirlbeater* (not included in ratings) which is something more than a mechanical egg beater but something less than the usual electric food mixer.

The *Gilbert Whirlbeater,* which weighed 1.2 pounds, consists of an electric motor in a plastic case, and a stainless steel agitator. The case with the motor is held in the hand and started and stopped by a conveniently located switch. It had only one speed. It was easy to manipulate, relatively quiet, didn't heat up excessively, and passed CU's test for shock hazard. Its portability, its ease of cleaning and its ability to mix very small quantities are all to its credit. It was used effectively



during CU's tests to mash potatoes, prepare cake frosting, and mix batter for a butter cake described in a recipe accompanying the beater.

But claims that it will mix "twice as fast as a hand beater, faster than bulky electric mixers" were not borne out. It took longer than most hand beaters to beat CU's test mixture. In CU's opinion, the *Gilbert Whirlbeater* is more useful than a hand mixer, but no substitute for an ordinary electric mixer for anyone who does much baking. And its price — $13.95 — is a steep one for an in-between tool of this sort.

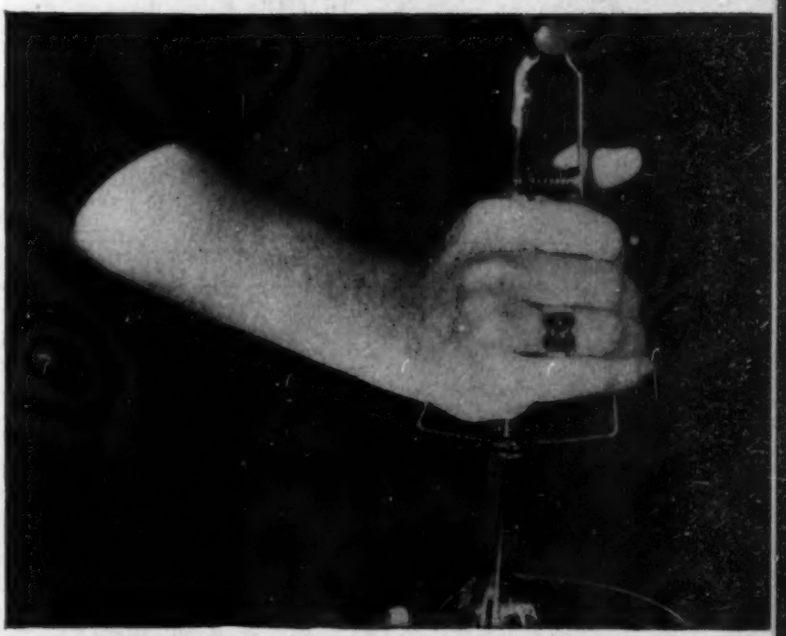
Of the beaters designed for one-hand operation — all rated "Not Acceptable" — CU predicts an especially dim future for the *One-Hand-Wip* No. 100. It is operated by squeezing two bars together, than releasing them — a tiring operation, and one that proved to be annoying, for a serrated bar, used to actuate the gears, kept hitting the operator's wrist. Raising the hand to avoid the bar made operation still more tiring. The *One-Hand-Wip's* beating speed was lower than average; the beater tended to stick during operation, and it rusted after several washings.

The *Boun-c-Beater* worked with an up-and-down motion: pushing down on the upright handle caused the beater blades to turn in one direction and at the same time compressed a spring; releasing the pressure allowed the spring to push the handle up again, and caused the blades to turn in the opposite direction.

Basically this is a good design, one that should make for fast beating and easy operation. But there were serious construction flaws in all three of the samples tested.

The *Speedy Chef* is a less-than-average quality rotary egg beater that comes equipped with a metal stand, and can be used either with the stand and one hand, or without the stand with two hands. When on the stand, the beater could be tilted by means of a hinge to a horizontal position, to permit removal of the bowl.

Here again is a design that should be good, but one with inherent difficulties. When turned quickly, the beater tended to swing back on its hinge unless held down with the "free" hand. And the bottom of the beater was too far from the bottom of the bowl to permit the mixing of small quantities. There was enough spring in the stand to push the beater down to the point where it would beat, but this required two hands and enough extra pressure to be tiring. Furthermore, the stand was



◀ *At left are gears of two-speed* Worlbeater, *quietest model tested.* ▶ *Electric* Whirlbeater (*top*) *was more useful than mechanical beater, less so than electric mixer.* One-Hand-Wip (*center*) *had worst design; in use the bar catches operator's wrist.* Boun-c-Beater (*bottom*) *had promising design but construction flaws in samples tested rated it down*

secured to the table top by three rubber suction cups — all right for a glass or enamel surface, but useless on wood; and when the rubber cups wear or are injured, all you have left is a relatively poor egg beater, and a $2.50 one at that. Finally, the beater blades rusted during the corrosion test.

How CU rated

CU rated down beaters which had extra dirt-holding areas and difficult-to-get-at parts. A kitchen gadget that requires special brushes and intricate cleaning operations quickly loses its appeal. The *Worlbeater's* simple construction — achieved, incidentally, with no sacrifice of durability — made it the easiest to clean.

Because of their shape and construction, egg beaters are difficult to dry. They should, therefore, be made of rust-resistant materials. In CU's tests, beaters were washed several times over, and air dried each time. Beaters with rotators which tended to rust were rated "Not Acceptable." Those with stainless steel rotators, but with other parts that rusted, were given low scores.

The "feel" of an egg beater is also important. If it "feels" right, the chances are it won't be excessively tiring to use. Holding handles which cramped the hands, or were loose; and crank handles which were too small for a comfortable grip, too tight to revolve easily, or too close to the holding handle, were all given demerits.

Both *Ladd* models were rated "Not Acceptable" because of sharp, unguarded gear teeth.

A beater's efficiency depends on the shape, size and number of blades; on closeness of the blades to the bottom of the bowl and on the gear ratio. Other things being equal, a lower gear ratio means more and faster turns to achieve a desired mixing consistency. Most beaters are designed so that one revolution of the drive wheel results in four to five of the beating turns. But the *High Speed Beater* had the lowest gear ratio (3.4 to 1).

CU's test for relative beating effectiveness involved running each of the beaters at a comfortable rate, and under standardized conditions, with a mineral oil and soap solution. Thickness of the mix was tested at intervals. Degree of spattering and noisiness was also recorded.

In scoring, CU gave over-all convenience in use and ease of cleaning greatest weight, while efficiency, safety and durability were given less weight. The ratings that follow are listed in order of over-all score.

Egg beater ratings

▶ *Except where noted, all beaters were of the rotary type, had stainless steel rotators and were corrosion resistant. Listed in order of over-all score, but note comments.*

acceptable

Two-speed egg beaters

▶ *The following two beaters were judged to be approximately equal in over-all quality.*

■ — WORLBEATER 2-SPEED MIXER (Na Mac Products Corp., Los Angeles). $1.98. Average mixing speed. Had low speed for mixing viscous liquids. Handle in nearly upright position, might be uncomfortable for left-handed people. Easy to clean. Quietest of beaters tested.

■ — MAYNARD 2-SPEED MIXER (Maynard Mfg. Co., Los Angeles). $2.50 to $2.95. Better than average mixing speed. Had low speed for mixing viscous liquids. Handle in upright position. Easy to clean.

Single-speed egg beaters

▶ *Listed in order of over-all score. All had horizontal handles except where noted.*

■ — BEST (Ekco Products Co., Chicago). $3.25. Better than average mixing speed. Beater was very well made; heavy and durable. Easy to clean.

▶ *The following beaters were more difficult to clean than those listed above. Quality differences were small.*

■ — EDLUND (Edlund Co., Burlington, Vt.). $1. Average mixing speed. Noisiest beater tested, and spattering was above average.

■ — ANDROCK (Washburn Co., Andrews Div., Rockwood, Ill.). $1.25. Average mixing speed. Flat metal side pieces made operation uncomfortable because they pressed into hand during operation. Drive wheel and other plated parts rusted somewhat.

■ — BLUE WHIRL (Turner-Seymour Mfg. Co., Torrington, Conn.). $1.79. Average mixing speed. Handle became loose during operation, making firm grip impossible, and flat metal side made operation uncomfortable. Drive wheel and other plated parts rusted somewhat. Cleaning was made more difficult by the beater's flat rotator guards.

not acceptable

▶ *Listing is alphabetical. Note comments.*

○ — A & J HIGH SPEED BEATER (Ekco Products Co., Chicago). 79¢. Lowest gear ratio of all rotary beaters tested. Handle became loose during operation, making firm grip impossible. Flat metal side pieces made operation uncomfortable. Rotators were not stainless steel, and tended to rust.

○ — BOUN-C-BEATER (Transcontinental Machine Tool Co., NYC). $1.39 to $1.59. Plunger-type beater. Above average mixing speed. Would have been rated directly below the *Best* beater, except that all three samples tested had defects: one rusted excessively and its blades were bent down too far towards the bowl; another did not return to the "up" position easily when pressure on the handle was released (both of these had breakable clay handles); the metal handle of the third sample came off easily. Spattering was more than average. This brand was best of samples tested for mixing small quantities of materials.

○ — LADD Models No. 3W and 4W (United Royalties Corp., NYC). $1 and $1.25, respectively. Models were the same except that No. 4W was slightly larger. Above average mixing speed. Both had small and uncomfortable handles, and crank handles which were too close to the beater handle. Rotators were not stainless steel. Both had sharp, unprotected drive wheel capable of cutting or knicking the hands.

○ — ONE-HAND-WIP (Eagle Precision Mfg. Corp., Long Island City, N. Y.). $1.50. Squeeze-type beater. Below average mixing speed. Rotators not stainless steel and tended to rust. Operation tiring, and beater tended to jam.

○ — SPEEDY CHEF (Weba, Inc., Queens Village, N. Y.). $2.50 for beater and stand. Average mixing speed. When placed on stand, beater was only fairly convenient to operate. Upright handle was too small, and tended to work loose. The wooden crank knob on one sample did not revolve easily. Rotators were not stainless steel; beater tended to rust at points where plating was thin or scratched.

○ — TAPLIN (Taplin Mfg. Co., New Britain, Conn.). 59¢. Average mixing speed. Flat metal side pieces which hold handle pressed uncomfortably into hand during operation. Rotators not stainless steel and rusted excessively.

Photo Printer

In spite of some shortcomings, the *Abbey Flash Printer* turns out fairly good drugstore-quality prints

A revolutionary new type of photographic printer which permits simple and accurate control of printing time by means of an intermittently flashing light; one that can be used in a room with ordinary illumination; one that cuts the possibility of failure to the very bone and produces almost unfailingly fine prints — and all at a very low price. Such have been the claims for the *Abbey Flash Printer* which entered the photographic market with a flourish of advertising trumpets.

And it is true that, like many other postwar wonders, the *Abbey* does have its points. But — also like many others — the *Abbey* falls somewhat short of the advertised promises. CU's tests of two samples of the *Abbey Flash Printer* show that only some of its "special features" justify the claims:

1. *Portability.* TRUE. The *Abbey* is a small (3x6x8 inches), light-weight (1½ pounds) metal box, easily portable and capable of being stored in very little space. In this, the *Abbey* undoubtedly has the edge over the traditional print box, which is much larger and heavier.

2. *Economy.* TRUE AND FALSE. The price of the *Abbey* — $8.80 — is fairly low in the present photographic market. But most of the higher-priced boxes offer features which the *Abbey* lacks: adjustable margins, larger-size paper capacity, more even lighting, automatic switch. It is true, too, that the *Abbey* eliminates waste in paper trimming by the use of standard, pre-cut paper sizes. But — if you're willing to stick to the standard sizes — so does just about every other contact printer on the market.

3. *Time Control.* VARIABLE. The distinguishing feature of the *Abbey* — a printing light which goes on and off intermittently — may or may not be an asset. In theory, the "on" intervals are of uniform duration, so that the user can time the printing accurately and simply by counting the number of flashes. This would mean that for negatives of the same density, and with the same printing paper, it should be possible to get prints of uniform density simply by exposing for the same number of flashes. Unfortunately reality diverges from theory here. The "on-off" mechanism of the *Abbey* is operated by a thermostatically controlled switch. In a cold room, the "on" periods start out at about 9/10 of a second each. As the printer warms up in continued use, each flash becomes about a second. In a very warm room, especially after prolonged use of the box without fairly long cooling-off periods, the operation becomes quite erratic, and the "on" period may stretch out to five seconds or more. Under such circumstances, the flash timer greatly decreases instead of increasing the accuracy of exposures. There is no provision for disconnecting the flash mechanism to obtain steady light, measurable by old-fashioned methods.

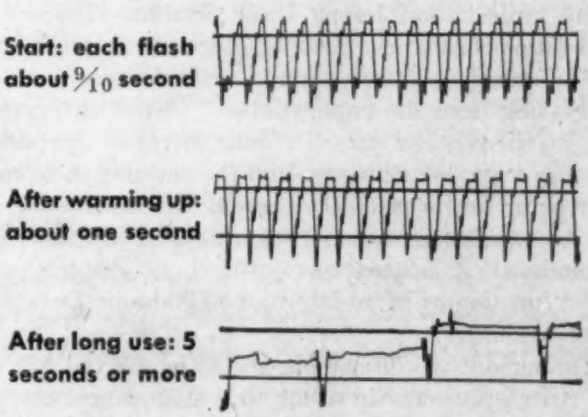
4. *Professional Results.* TRUE OR FALSE, depending on what you mean by professional. You can achieve the same neat border and bright print quality that you get when you send your negatives to the corner drugstore, it's true. But that's about all. Cropping to eliminate unwanted portions of the negatives is all but impossible with the fixed-size masks that go with the *Abbey*. Margins are fixed at ⅛ of an inch — no more, no less. No. 116 film (2½ x 4¼ inches) is the largest the *Abbey* will take.

One other feature prevents prints from achieving top quality. The *Abbey* prints with a single bulb (a 25 watt,

Continued on page 258

Mechanics of operating the Abbey Flash Printer *are fairly simple, except that button with heavy spring must be pressed down while printer is in use*

The Abbey's *on-off light, used to time prints, isn't too reliable. Diagrams below show how duration of "on" intervals changed as printer warmed up. After prolonged use, timing switch became very erratic*



long, frosted bulb), not too uniformly diffused, with the result that prints tend to be somewhat darker at the center than at the edges. In the average picture, particularly one that is no larger than 2¼ x 2¼ inches, this will seldom be discernible. It is likely to be annoying only with rather flat negatives of large size.

5. *Use in light.* FALSE. There is no special feature of the *Abbey* which would make it any more usable in a lighted room than any other printing box. Any contact printer can be used in a lighted room with ordinary contact printing paper, if the light is dim enough and the operator agile and careful enough. But the chances are that most persons will prefer the convenience of an amber light after a few experiments with the lighted room technique.

Despite its shortcomings, the *Abbey Flash Printer* has something to offer. Its price is relatively low; it is small and compact; its "on-off" flashes offer a convenient time-counting method provided you can learn to take its eccentricity into account; and it turns out fairly good, clean prints with as little fuss and bother as any printer on the market. It can be a good buy for one who is satisfied with drugstore-quality prints with little effort. It can be a useful supplement for photographers who want test prints of their negatives before they decide whether or not to enlarge them. But the *Abbey* is *not* the instrument for you if you want consistently fine contact prints, and some leeway in composing them.

CU's Annual Meeting, *Cont'd from inside cover*

The chairman of the evening session was Dexter Masters, Co-editor of *One World or None.* After the showing of a film bearing the same name and distributed by the National Committee on Atomic Information, the meeting was turned over to questions from the floor.

Answering the questions were James Newman, Senior Editor of the *New Republic,* former legal counsel to the McMahon Committee; David Hawkins, Member, Executive Committee, National Committee on Atomic Information, formerly historian for the Los Alamos bomb project; and Joseph Rush, Secretary-Treasurer, Federation of American Scientists, formerly at Oak Ridge.

The questions they answered evoked discussions of everything from the implications of atomic energy for war, to the peaceful uses of atomic energy — the possibilities for producing power, and the meaning of atomic energy for future medical research. The functioning of the Atomic Energy Act of 1946 and the Atomic Energy Commission it created was outlined, as was the proposed functioning of an international Atomic Development Authority.

Throughout the discussion, accent fell on the role of the citizen-consumer in seeing to it that atomic energy is operated in the public interest.

Photo by Monkmeyer

With scientific acceptance of man's role in the problem of infertility has come increased promise of its alleviation. Willingness to meet the cost in time and inconvenience may lead to the satisfaction, for many, of having a wanted child

CHILDREN FOR THE CHILDLESS

Although childlessness may be on the increase, the failure of couples to have wanted children can often be overcome if they will seek competent help and carry out prescribed procedures

The failure of married couples to have children even though they want them is the subject of increasing concern both to the couples themselves and to the medical profession. It is known that at least 10% of marriages in the United States are involuntarily childless; some estimates place the figure at one in every eight or nine couples. One physician has said, "The marvel is not how fertile, but how sterile is humanity." So far as the gynecologist is concerned, sterility, not contraception, is the biggest problem.

Until recent years, a large family was desirable for economic reasons, and barrenness was a curse and an economic disaster; indeed, it was an offense against family and state, and provided grounds for divorce or enforced dissolution of the marriage by the court.

It has not been proved statistically that, percentage-wise, involuntarily childless families are increasing, but some gynecologists believe that they are.

One possible explanation might be that people for many reasons tend to marry later in life than used to be the case, and in addition put off planning children until they have passed the best age for having them. There is no evidence to back up the suggestion sometimes heard that the use of contraceptives might induce sterility, although their use, if prolonged, tends to defer conception beyond the age of maximum fertility.

In any case, much attention is being focused on the problem of involuntary childlessness, and many couples are going to physicians for consultation and advice. Greater freedom of discussion and diminished embarrassment about sexual matters is probably one factor operating to bring about this result.

Childlessness results, of course, not only from the inability to conceive, but from the inability to bear a live child. This article concerns itself only with so-called primary sterility, in which for some reason the woman has never become pregnant.

Not until comparatively recent medical history has the responsibility for sterility been placed on the male, and an effort made to study the part he might play in the couple's inability to have a child. The former assumption was that the woman was entirely responsible, and the man curiously free of any responsibility. It is now known that the male is solely or partly responsible in more than half of all cases of childlessness. With the scientific acceptance of man's role in the problem of childlessness has come greatly increased promise of its alleviation.

It is pretty well established that there are relatively few individuals, male or female, who can be considered absolutely sterile, or incapable of initiating the reproductive process. Most people are actually relatively fertile, but in varying degrees.

The degree of relative fertility of a given person or couple is not measurable, but it is clearly demonstrated by the fact that in couples of high fertility, pregnancies occur as promptly and frequently as they are desired, and carelessness in contraceptive practice results in pregnancy. In other couples, where one spouse is apparently normally fertile and the other only moderately so, pregnancy may be deferred for some time. It is in these marriages that a supposedly inadequate contraceptive appears to give perfect protection. In those couples where each member is of low fertility, the mating may be childless, although a subsequent marriage of either partner may result in children.

The reproductive process is a very complicated one, and if there are any obstacles to it at any point, lowered fertility may result. Nature may operate in some cases to overcome one or two obstacles to conception which may be present even in proved fertile couples. In other cases it is the role of modern medicine to clear up enough

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BY JEAN WHITEHILL, *chief author of CU's "Report on Contraceptive Materials" and—from 1931 to 1942—executive secretary of the Philadelphia Maternal Health Centers. This article was checked by specialists in the field, including Dr. Alan F. Guttmacher, Associate Professor of Obstetrics, Johns Hopkins Medical School; Consultant to the U.S. Public Health Service; Director of the Infertility Clinic, Baltimore Planned Parenthood Clinic.*

of the factors that lead to infertility to raise the couple's fertility quotient above the level necessary to conceive.

In studying possible causes of sterility, it is necessary to make sure that development and maturation of the female ovum are taking place. There are abnormal cycles in which women menstruate but no ripe ova are produced; others in which they do not even menstruate. The normal female cycle consists of:

1. production of ova, in the ovary —
2. ovulation, or release of the mature ovum from the ovary —
3. the passage of the ovum from the ovary to the Fallopian tube —
4. preparation of the lining of the uterus to receive the fertilized ovum —
5. physiologic changes with resultant uterine bleeding, or menstruation.

This is repeated monthly, unless fertilization occurs.

Present medical practice

Since it has been determined that sterility in marriage is almost never due to one factor, but to a complex of factors — perhaps as many as nine in a single case, and certainly more than one in nearly three-quarters of all cases — present medical practice is to improve the fertility of both partners by eliminating as many of the retarding factors as possible.

First steps in the investigation of infertility are to find out whether ovulation is occurring in the female, while at the same time determining whether the male is capable of producing normal sperm.

Whether the sperm meets requirements is determined by analysis of one or more specimens, collected under carefully controlled conditions of preservation and delivery to physician or laboratory.

Where the semen shows significant deviations from accepted norms, the physician will make efforts to correct the deficiencies, and treatment will be accompanied by repeated semen analysis.

Where no sperm cells at all appear after repeated examination of the male, two possibilities have to be considered; the first is that no mature spermatozoa are being produced; the second, that they are being produced but not being ejaculated. To find out which is actually the case requires a rather simple and not very uncomfortable procedure known as a testicular biopsy. The possibility of correction in the second situation is not very great, although urologists think that men suffering from some sort of obstruction should be accorded the chance that surgery may be helpful to them.

If the physician is satisfied that the woman is ovulating normally, and her husband is producing normal sperm, he may wish to determine whether there is any blockage which is preventing the ovum from reaching that part of the woman's Fallopian tube where fertilization by the sperm takes place, or indeed any blockage at any point in the tube. This may be determined in one of two ways; by the Rubin test, named after its inventor, which consists of introducing carbon dioxide under pressure into the uterus; or by injecting some radio-opaque oil into the uterus, and then observing it by means of either a fluoroscope or X ray.

In addition to being used diagnostically, tubal insufflation (the carbon dioxide procedure), and the injection of iodized oil are sometimes used therapeutically to overcome blockage of the tubes. If these and other measures are unsuccessful, or their use does not seem indicated, surgical procedures may be resorted to.

In both men and women, general good health is apparently necessary for fertility, and the fertility level of a couple can often be brought up by improving nutrition, or relieving fatigue, anemia and other physical conditions that reduce physical well-being.

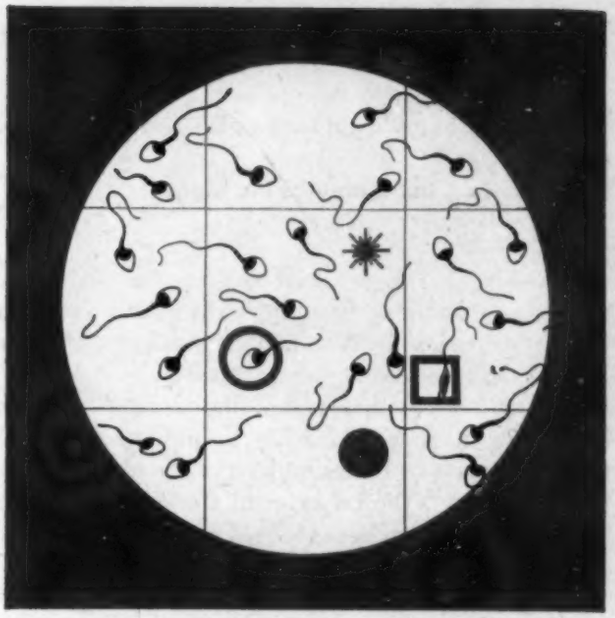
The failure of pregnancy to result where apparently all the physiologic functions of reproduction are normal in both partners suggests the need for some consideration of psychologic factors. There is still resistance on the part of the medical profession to the psychologic approach, but with the growth of knowledge about and the practice of psychosomatic medicine, the importance of psychic factors is being increasingly recognized.

It is not unusual for a barren couple to have a baby of their own after they have already adopted a child. And it may be that the release of tension has in some way permitted the resumption of the normal processes involved in fertilization. Particularly with those women for whom changes in living circumstances occur without changes in their structure or physiology, and a pregnancy results, we are forced to admit that psychologic factors may play a significant part. Many physicians urge that after all anatomic and endocrine disturbances have been eliminated — and still no pregnancy — the patient should be studied by psychiatric means.

The need for promptness

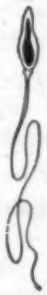
Because we know that fertility declines with advancing years, couples should investigate very promptly their inability to have children when they want them. It is becoming more and more accepted practice that a couple which has not conceived after six to twelve months of trial should consult a physician or clinic trained to give special attention to these defects. County medical societies and hospitals can make referrals to doctors and clinics specializing in sterility. The family doctor should also be able to refer to the proper places. Since in many cases it is necessary to submit to special diagnostic procedures, it is essential that couples get into the hands of someone who has both access to the equipment and knowledge of how to employ the latest diagnostic and therapeutic techniques.

In spite of general agreement among reputable physi-



A high concentration of sperm, as represented in center square, affords best chance for pregnancy. One study of 200 fertile men showed average of 120 million sperm per cubic centimeter; 60 million is sometimes referred to as a kind of dividing line. But pregnancies have frequently resulted from men with sperm counts less than that. Actually no figure can be established below which conception is not possible. Sperm count is only one index

Normal sperm cell consists of head, neck, middle section and tail. Tail is ten times length of head, and within total length of about 55 microns (about 1/500th of an inch) lie the individual, racial and unknown characteristics for perpetuating stock. One ejaculation may contain up to three billion sperm



Abnormal spermatazoa are one basic cause of infertility, although some abnormal cells are found in semen of fertile men. Abnormal sperm which are tapering in shape, like this one, are believed to have a particular relation to infertility. Other factors are motility of sperm, volume and viscosity of semen

Complete absence of sperm in the semen is not common; and even when observed it does not necessarily mean that sperm are not being produced. Where continued semen analyses show complete absence of spermatozoa, one hope for the couple lies in artificial insemination with donor's sperm

cians that the use of endocrine preparations to treat male sterility which is non-endocrine in origin is not only futile, but in some cases actually harmful, endocrine therapy is still being prescribed rather widely. Granted that the causes of male sterility are often difficult to determine, that is not sufficient reason for the present wholesale resort to hormone preparations.

Some blame may attach to patients who bring pressure upon conscientious and well-informed physicians to try this treatment, even though the physician is convinced that it is useless. Blame also rests with the pharmaceutical houses which continue to advertise the treatment of male sterility through the use of hormone preparations.

No one should take the most tentative steps to alleviate childlessness without a complete realization of what is involved in terms of time and cooperation. This is no business for those who lose heart easily, or who cannot carry through what may be a very long-drawn-out procedure for both partners.

Although for many reasons it is wise to seek advice before the sterility is of too long a duration, that fact should not keep anyone from seeking help even though pregnancy has been attempted unsuccessfully for more than a year or two. However, there are cases where the most skilled practitioner is helpless in the face of proof that the husband is irremediably sterile, or where the delivery or reception of the sperm cannot be achieved in the normal way. In these cases, conception can sometimes be brought about by means of artificial insemination, a procedure whereby semen, either from her husband or an anonymous donor, is introduced into the woman's genital tract.

There are both physical and psychologic complications inherent in this procedure. Where there is a donor other than the husband, moral and legal questions also arise. In spite of these difficulties, the practice of artificial insemination is growing, and very few forward-looking specialists have no cases in their records. Success with this method follows the usual curve of normal reproduction, with some women conceiving at once or in the first three months or so, others not for a year or more, and some not at all.

Since the desire to have children is one of the strongest human drives, its thwarting may result in tensions that will endanger all but the most stable marriages. So it is very important that people understand that this desire can be realized in as many as half of the cases of involuntary childlessness, although treatment may have to be quite prolonged. Prompt application for help, avoidance of quack prescriptions and kindly but unfounded lay advice, and willingness to meet the cost in time and inconvenience should pay off many times over in the satisfaction of being able to have a wanted child.

The Telltale Skin

Emotional tension is not a direct cause of skin disorders, but it may be the trigger

That the skin may reflect activities or disturbances of the mind has long been apparent even to casual observers. If it is difficult to be persuaded that an attack of indigestion or asthma may sometimes be caused by emotional tensions that cannot find normal channels for expression, it is not difficult to note that the skin blushes, sweats or itches under the stress of emotional tension. In fact, the behavior of the skin in emotional states provides striking evidence of the interrelation of the functions of mind and body.

The child who is praised by a teacher will blush with pleasure. An adolescent boy may blush when asked to speak before a group or when he talks to a girl he likes. Or he may blush at the slightest reference to a sexual subject. Emotions associated with pleasure, guilt, etc., do cause changes in the skin, and blushing is the name we have for one of the simplest of these changes.

The mind may influence the skin (and other organs as well) in two ways — by nervous impulses reaching the skin or by changes in the hormones and chemical equilibrium of the body. The blood vessels of the skin are particularly susceptible to nervous or hormone changes. Such responses — called vasomotor reactions — lead to blushing when the blood vessels dilate, to pallor when the blood vessels contract.

While one person will blush under tension, another will sweat. The hands and feet may, in some cases, almost pour sweat. In some persons, the sweating occurs only under the influence of obvious excitement, as during a critical examination. In others the sweating may be more persistent and reflect a constantly active emotional tension of some sort. One recalls, for example, Uriah Heep, whose hands were always wet with cold sweat arising out of a constant state of barely suppressed excitement.

The trigger factor

Doctors have often noted that excitement may provoke an outbreak of cold sores (the medical term is "herpes simplex"). Although cold sores about the nose and lips are probably caused by a virus, emotional tension may act as the trigger which breaks down the skin's defenses against the virus. More directly, menstruation, sunlight or an attack of common cold can be trigger factors. Here we have one more instance of the degree to which phenomena of nature are the result of the operation of several factors or determinants. The pneumococcus is not likely to cause pneumonia unless other factors making for lowered resistance are present. By the same token, of course, an emotional outburst or state of tension will not directly cause a skin disorder, but if other elements are present — allergic tendency, dietary imbalance, external injury, hormone change, or the like — the disorder may follow.

Similarly with "hives" or urticaria. A person may be "sensitive" to strawberries and get an outbreak of hives after eating some. Under a different set of circumstances — to which, in the opinion of some doctors, a change in his emotional temper may contribute — he may eat them without getting hives. In treating or preventing hives it may therefore be useful to look into possible emotional factors.

Recently, several new "anti-histamine" drugs have been introduced for the relief of allergic disorders such as hay fever, asthma and hives. *Pyribenzamine* and *Benadryl* are the most effective of these drugs. The fact that they relieve an attack of hives does not mean that the eruption is entirely allergic. Emotional tension can also cause an excessive secretion of histamine — the substance that produces the hives.

Response to suggestion

A classical and dramatic instance of the effect of emotions on skin disorders is the response of warts to suggestion. The common type of wart — growing on fingers and hands — is probably caused by a virus. Yet persons who are susceptible to suggestion have been known to lose their warts when the doctor has asserted in a confident manner that after a certain interval the warts would disappear. The belief in the doctor's prediction, in instances of this sort, is apparently all that is necessary to make them disappear.

Itching is another skin symptom which can be initiated or decisively influenced by the emotions. Touching or stimulating the skin can, of course, cause intense excitement, pleasurable or otherwise. And doctors have pointed out that nervous scratching of the skin in the genital area may often serve as a kind of substitute sexual gratification.

Psychiatrists have also long been familiar with states of mind in which hostile or aggressive activity against oneself may be a prominent feature of the disorder. Intense itching and intense scratching, even to the point of actual tearing of the skin, may occur with such individuals.

In many persons, persistent itching leads to chronic skin changes which in turn can aggravate the itching. The vicious cycle of itching ➤➤ scratching ➤➤ skin disorder ➤➤ more itching — cannot be broken simply by the use of a salve or lotion. With such disorders of the skin, it is necessary to find the underlying cause of the trouble, whether the cause is physical or emotional.

the shape of things

by Elliot F. Noyes

In designing *Portable Radios*

manufacturers have shaken off usual style limitations

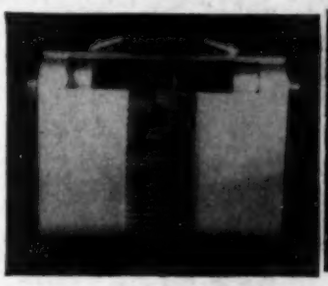
There seems to be a strange inconsistency in the way that a direct and reasonable approach to design becomes permissible and desirable the moment one is dealing with anything outside the living and dining areas of a house. Kitchens and bathrooms are designed with modern equipment and in a modern spirit. Most outdoor furniture is designed for efficient use and attractive appearance even though the living room may be full of Hepplewhite reproductions. Even radios seem to follow this rule.

We have discussed the unhappy problem of period styles superimposed on console radios for the living room (*Reports*, April and June). With portable radios, on the other hand, the limitations of style are suddenly shaken off, and manufacturers feel free to approach the design problem from a more functional point of view. Portability involves special considerations which necessarily affect appearance and which, when imaginatively exploited, can give a very definite and interesting character to the design.

For the group of portable radios rated this month, the design problem varies somewhat with the size of the set and its range of use. Since the smallest ones are generally carried in a pocket or suitcase, there must be a method of covering the controls. The largest sets need rugged protection since they are exposed to the same hazards of baggage handling that any standard piece of luggage encounters. The middle-sized sets generally have permanently exposed dials and controls. In all cases there is need for compactness, ease of carrying, simplicity of operation, ready access to batteries and power cord, and as good performance as is consistent with the size of the set. In solving all these problems, there is opportunity for good design expression.

Of the entire group, the *Sentinel* (rated "Not Acceptable" by the laboratory) is the only one which has been really successful in finding a fresh and thoroughly attractive design (*see cut*). This is a small set in which the various functional elements have been resolved into a very simple form. Within this form, however, each main element is clearly expressed. The set is a slightly bulging rectangular shape which has plain sides but is ribbed all the way around on the other faces. A handle on the upper edge provides a comfortable grip for carrying the set.

The Sentinel (*above*), *and the* RCA *66BX and* GE *260* (*l. to r. below*) *were the best designed of portable radios tested*



The two plain faces both open. One is held in place at its center by a single catch and is easily removed for access to the batteries and cord. The other face is hinged, and catches open at either 90 or 180 degrees from its closed position, exposing an inner face and the controls. This inner face contains a rectangle of perforated brass which covers the speaker, and recessed control wheels at either side which are operated by the thumb.

In use, the radio may stand upright, on either end, or on its back. It therefore lends itself well to use on a small shelf, in a bookcase, on a bedside table, or almost anywhere you can think of, since it does not have to face in only one direction or sit on only one face. There has been no effort to add decorative frills. Its pleasing appearance has been achieved through good proportion, direct use of well-chosen materials, judicious variation of textures, and a simple color scheme of black plastic and brass (another agreeable version has the plastic of the center section in red while the plain faces remain black). This is a thoroughly satisfactory design job, and the best of the group from that point of view.

Although none of the other sets is completely successful, a number of them have their points. The *GE* 260 (rated "Not Recommended" by the laboratory) has many. It is sturdy and well-constructed, and possesses that rare item, a well-designed dial. The *RCA* 66BX (also rated "Not Recommended" by the laboratory) stands out from the run of the lot, with an aluminum case which is fresh and attractive, though perhaps not very sturdy and not well-detailed throughout. There is still plenty of room for ingenuity and fresh design in this field — and for designers and engineers to get together.

A few moments ago your engine was purring right along. Suddenly it stops . . .

what now?

A few moments ago your engine was purring right along. Suddenly it sputters to a stop, or just dies. Your efforts to start it fail. What do you do? Of course, you can make your way to the nearest telephone and call a garage for help, but this article assumes that you are either willing to do some of your own troubleshooting or are in a situation where you have to.

Even if you do give up at the start and call a garage, you will save time all-round — and a mechanic's time costs you money, even if yours doesn't — by giving the garageman a few facts over the phone. Tell him, not what *you think* is the matter, but what he needs to know: that there is or isn't gas in the tank; that the headlights light, or don't; that the engine cranks when the starter is pressed, or doesn't; that it fires and quits or does not fire at all. The more specific details you can give, the quicker he will get you rolling; he won't have to assemble tools for every possible emergency.

If it is summer, let the car stand a few minutes before you call for help, then try starting it without choking or pumping the accelerator, but with the accelerator pedal held down. This is to make sure that you haven't simply overchoked the engine or overloaded it with gasoline in earlier efforts to get it started. Garages make quite a few service calls where this is all that ails the car.

It is important that whoever attempts to resuscitate the engine knows the history of the stoppage. In hot weather, for instance, vapor lock is most likely to occur following a brief stop after a hard pull or high speed run. The gasoline turns to vapor from the heat of the engine and can't be pumped into the carburetor. A cooling-off period always cures the trouble. In wet weather, the spark plugs and wires should be wiped dry if there is any moisture on them before attempts are made to get the engine going. In general, irregular running of the engine, before it stops, usually means fuel supply trouble, whereas sudden intermittent or complete non-firing, in which the engine is kept running only by the momentum of the car, usually means ignition trouble. But the unexpected often happens, and a careful review of the symptoms is a big help in diagnosing the trouble.

If you elect to treat a balky engine without professional help, here is your procedure:

If you press the starter pedal or button and the starter does not operate, see if the lights will light or the horn will blow. If not, and assuming that the battery was in normal condition before the stoppage, check the battery connections.

Only two conductors leave the battery. One is a ground connection, usually of braided wire and uninsulated, running to the frame. See that it is fastened tightly at both ends and that the connections are clean and bright. From the other post of the battery, a heavy insulated cable goes, sometimes via a relay unit, to the starter, which is always low down at the rear of the engine, next to the flywheel or flywheel housing. (It is to the starter terminal, or to the relay, that wires supplying all other current needs are attached.) See that the starter cable is clean and tight at all points of attachment and that nothing has rubbed a hole in its insulation so as to cause a short circuit.

If the lights do light, see what happens to them when you press the starter pedal or button. If they stay bright and the starter does not operate, the trouble is almost certainly in the starter switch, and you probably won't be able to fix it yourself. Cars with push-button starters sometimes have a second push button on top of the starter itself, and this may work.

If the lights fade, stop

But if the lights almost fade out when you push the starter, stop at once. If you have checked the battery connections and found them satisfactory, then there is a bad short circuit inside the starting motor, or the gears by which it turns the engine are jammed. The latter condition may sometimes be relieved by putting the gearshift lever in high and rocking the car forward and backward. But the car's engine may be stuck (cranking with a hand crank would tell you), or there may be mechanical trouble in the starting motor itself. If you suspect a jammed starter or stuck engine, do not allow the car to be towed or pushed while it is in gear.

Don't just sit and push the starter if it turns the

engine and the engine doesn't start. Save the battery's energy for legitimate tests. First of all, you must learn whether the trouble is with the fuel supply or the ignition. And this is easy to do. Turn the ignition switch on, detach the wire from any spark plug and hold it (*by the insulation*) with the end about $\frac{3}{16}$ of an inch from the cylinder block. If a spark jumps the gap when the engine is turned, the trouble — barring freak possibilities like a complete set of broken spark plugs — is probably no gas at the carburetor.

If you get a spark . . .

Under these circumstances make sure, to begin with, that there is fuel in the tank (don't trust the gauge). Leave the cap off, or make sure that the vent into the tank is open. Remove the air cleaner — the black can at the top of the engine, above the carburetor — and look down the carburetor throat. Open the choke valve, if necessary, so you can see, and use a flashlight. Have someone depress the accelerator all the way quickly; you should see a spray of fuel from the accelerating pump, or a white mist of atomized gasoline. As a rule, if the throat remains dry, no fuel is reaching the carburetor. To make sure, disconnect the carburetor end of the fuel pipe which runs from the fuel pump to the carburetor. Gasoline should spurt from this pipe when the engine is turned, *with the switch off*. (Save a little of it in a cup or other receptacle.)

If fuel is being delivered to the carburetor but none is appearing in the carburetor throat, reconnect the gas line and briskly tap the carburetor body (below the point where the fuel line enters it) with a piece of wood or the rubber heel of a shoe. If the engine will not start after this treatment, pour not more than two or three tablespoonfuls of gasoline into the carburetor throat. If the engine starts and runs only while this fuel lasts, you have a serious carburetor stoppage.

If no gas comes from the fuel pump line during this test, disconnect the other end of the line at the fuel pump. Make sure the line is clear by blowing through it. Disconnect the line coming along the car frame from the tank where it enters the fuel pump. If you can, make sure that this line, too, is clear; it is easy to blow through it if you add a few feet of windshield wiper hose at the disconnected end. If it is clear, air bubbles can be heard escaping in the gas tank.

In next month's Reports *CU's automotive consultant will discuss ways and means of getting the most for the money you spend on gasoline—how to help your car get the greatest possible number of miles per gallon.*

If all lines are clear, the trouble is in the fuel pump, and the only ways you can resume your journey are by having the pump repaired or replaced, or by rigging up a device for feeding the carburetor by gravity (see *Reports*, June).

. . . and if you don't

If no spark jumps the gap from the spark plug wire to the cylinder block, proceed as follows: Turn off all lights, radio, etc. Switch on the ignition and turn the engine while watching the needle on the instrument panel ammeter. Normally, the needle should oscillate between a small discharge and zero. If it now indicates a steady zero, there is a broken or loose wire, or other open circuit, in the primary wiring — the small wires which carry ignition current from the starter terminal post through the ammeter and ignition switch to the coil and ignition distributor.

If the ammeter shows a steady discharge during the above test, the primary circuit described above is grounded or short-circuited — assuming, in both cases, that the battery is normal, its cables have been checked as directed, and that the ammeter itself is not defective. (These tests require the car to have an ammeter in the primary circuit; they will not work on *Hudson* cars, which since 1936 have used a flashing indicator light instead of an ammeter, nor on the 1939–1940 *Ford* or *Mercury*, which use a "battery condition indicator.")

Next, locate the coil — a cylinder about two by eight inches, or, on recent *Fords*, the size of a half-pint cup — usually to be found near the distributor, the unit with all the large wires sprouting from it. A large (secondary circuit) wire leads from the coil to the center of the distributor cap. There are also two smaller wires connected to the coil (on *Fords*, the terminal labeled "BAT" is in question here). Disconnect the one that does *not* lead to the distributor, and again observe the ammeter while cranking with the switch on. If the needle now stays at zero, the trouble is in the coil or distributor, and you can so report when you call in for help. If the ground is in some other part of the primary circuit, the ammeter will continue to show a steady discharge.

In the latter case, you can be on your way almost immediately if you carry with you, or can obtain, a jumper wire — a three- or four-foot length of fairly heavy, insulated wire, preferably with sawtooth spring

clips at each end. Connect one end of the jumper wire to the battery terminal carrying the starter cable. Connect the other end to the small-wire terminal on the distributor itself. Turn the engine *with the switch off;* it will run provided coil and distributor showed up OK in the previous test. At the earliest opportunity, have the entire primary circuit between starter post and coil (which you have by-passed with your jumper wire) checked over.

Now, if there is even a partial charge in the battery and if you have used your jumper wire as directed, but still can't get going, you are down to these causes of trouble:

(1) The starter, if it appears to be jammed or the engine stuck, so that you dare not have the car pushed or towed in gear.

(2) Starter switch trouble; but a push or tow will put you on your way.

(3) Coil trouble. A coil cannot be repaired; a replacement is required. But be sure that the trouble is inside; that connections, including the large wire in its socket, are bright and tight.

(4) The distributor, which includes the condenser, a small metal cylinder about the size of a lipstick. Be sure that the condenser is tightly attached, metal to metal (grounded), that its "pigtail" is unbroken and tightly connected. Check the large wire running to the center of the distributor cap for good contact. Be sure the cap is clean and dry inside and out, and not cracked or broken. Check the plastic rotor under it, to see that it is unbroken and makes contact with the center of the cap when the latter is in place. Remove the rotor and see that the contact points below it are not loose or stuck open, and that they are clean and dry.

This is about all that can be done before the doctor (of motors) comes.

Bread & Butter

MONOPOLY—

For more than 50 years — from 1890 to the present time — Congress has passed specific antitrust laws and other legislation to break up existing monopolies, to combat the emergence of new trusts and to prevent monopolistic mergers of competing companies. But the steady and dangerous growth of monopolies in the United States has not been halted.

Investigations made by the Temporary National Economic Committee before the war revealed that, for manufacturing industry as a whole, about one-third of the total value of all products was made under conditions where the four largest producers of each individual product turned out from 75% to 100% of the United States production of these items. During World War II, the growth of monopolies was sharply accelerated and today, according to a report published by the Senate Small Business Committee, the 250 largest manufacturing corporations control some two-thirds of the nation's usable manufacturing facilities.

The Sherman Antitrust Act was passed at a time when the activities of the first big trusts aroused the concern of the public and Congress. Its aim was to break up the few big monopolies which existed then and to prevent monopolistic practices which might lead to the creation of new trusts. Two of the most obtrusive trusts — oil and tobacco — were prosecuted by the Government, but the monopolies continued to grow in number and size nonetheless, due to ineffective enforcement of the Sherman Act.

Commenting on this failure, a report issued early this year by the staff of the House Monopoly Subcommittee stated: "The antitrust cases brought from 1890 until quite recently were so few as scarcely to indicate a serious attitude about preventing the monopolistic practices and 'attempts to monopolize' which not only eliminate competition but which lead to concentration. Until recently the enforcement of the Sherman Act was largely a matter of a policeman looking the other way."

Public dissatisfaction with the lack of progress made

The monopoly laws have not worked—and even worse than that, they have hardly been used in fifty years

...and the green light

in breaking up monopolistic practices and preventing the growth of economic concentration led to passage of the Clayton Act in 1914. Section 7 of the Clayton Act was designed to prevent the growth of monopolies through the device of acquiring competing businesses. The section prohibited acquisitions where the effect was to "lessen competition."

Section 7, however, has remained a dead letter from the day it was put on the statute books. The Federal Trade Commission did little to enforce it until 1926. In that year, the Supreme Court, by a five to four decision, made the provision ineffective by ruling that it did not cover the acquisition of assets. The result was a flood of monopolistic mergers.

A review of the history of antitrust legislation and its enforcement leads to the inescapable conclusion that the former has been inadequate and the latter ineffective. The ineffectiveness is revealed by the manner in which the existing legislation has been enforced. Broadly speaking, there have been two types of antitrust activity: "restraint of trade" cases, where the purpose is to eliminate certain illegal practices through punishment or injunction; and monopoly cases, where the purpose is to reduce preponderant economic power through "dissolution, divestiture and injunction."

Significantly, there have been relatively few monopoly cases instituted under the Sherman Act. From 1890 to 1936, the number of Sherman Act cases averaged nine a year, and practically all of these were restraint-of-trade cases. Only recently has the Department of Justice placed substantial emphasis upon monopoly cases, and most of the suits filed since 1938 involving major corporations are still pending.

The Federal Trade Commission supposedly was given power under Section 7 of the Clayton Act to prevent monopolistic mergers — the only type of monopoly case which it is empowered to institute. But, thanks to the loophole in the law with regard to the acquisition of assets, the FTC has been almost completely ineffective on monopoly cases. That the Government over the past 50 years has conducted so few monopoly cases is a striking commentary on its entire antitrust program.

The Government has, of course, been seriously handicapped in its enforcement activities by inadequate appropriations. Monopoly cases are both expensive and difficult. But from 1890 to 1939, appropriations for the Antitrust Division of the Justice Department were so small that a few cases a year would have tied up the entire staff. That explains, in part, why the Antitrust Division has devoted its limited personnel to the more simple "restraint of trade" cases, instead of striking at

Continued on page 268

Sometimes the law works—the red light flashed in this case also

After seven years of litigation over patent abuses and monopolistic practices in the glass industry, the Government has won a settlement in the famous Hartford-Empire case.

The Hartford-Empire Company owned or controlled virtually all the patents in the glass container field, and was sole licensor and distributor of feeder machines, essential to the production of glass containers — a monopoly that kept wholesale prices of glass containers higher in 1940 than in 1899, despite the tremendous production increase that followed the introduction of mechanical processes in the industry.

Under the terms of the settlement, Hartford will, for the first time in its history, sell glass-making machinery outright instead of leasing it. Furthermore, container manufacturers will be able to produce their own glass-making machinery, or have it made for them by manufacturers of their own choice. Thus both independent glass machinery manufacturers and container manufacturers will be enabled to produce and sell in competition with Hartford.

Maximum royalty rates for feeder machines will be cut by two-thirds and subsequently reduced further — a reduction that will save the container manufacturer about ten million dollars in the next five years. And by October 31, 1950, Hartford must turn over three of its basic feeder machine patents to the public.

In the course of the case, the Justice Department commented as follows: "Hartford burdened the industry and the consuming public with royalty rates far in excess of those required to provide it with a reasonable return on its capital investment. In each of the years 1939 and 1940, it collected about six million dollars in royalties. The burden of such excessive royalties was, of course, passed on to the consumer as part of the price of glassware."

the roots of the economic power of the giant corporations.

Lack of personnel and funds has also resulted in the failure of the Government to develop a systematic check on the economic results of its antitrust activities. In the absence of such a follow-up, cases may be completed but their objectives circumvented at some later date. The Justice Department, for example, can win a legal victory that still does not eliminate monopolistic practices or prevent the growth of economic concentration.

GE's light bulb monopoly

A case in point is the unbroken monopolistic control by General Electric of the manufacture of electric light bulbs. The point is illuminated in a report made by the Justice Department on the abuse of patents in connection with the manufacture and sale of incandescent lamps. The Justice Department stated:

"General Electric secured domination of the lamp industry through ownership of the Edison patents on the carbon-filament incandescent lamp. When these patents were about to expire, control was continued through a series of restrictive agreements relating to lamp bases, bulbs, tubing, lamp-making machinery and patents pertaining to the lamp industry.

"In 1911, the Government, because of these restrictive agreements, brought action under the Sherman Act against several defendants, including General Electric. . . . This action was settled by a decree canceling and enjoining these arrangements. General Electric resumed domination of the industry in 1912 — this time mainly through the ownership of three controlling patents on electric lamps with tungsten filaments."

General Electric tightened its new control by developing a marketing system based on agency contracts, with the price of lamps being fixed as in the past by General Electric. But it was not until 1924 that the Government again brought suit against the new restrictive agreements. By that time, of course, General Electric was in an even stronger position than before the Government's first suit.

The Government's antitrust activities are also seriously hampered by the extremely small penalties which are all that can be imposed under the antitrust laws. They are so low that violations can be regarded by large corporations as a good business risk. The Justice Department has admitted that criminal cases are not an effective means of restoring competition where preponderant economic power already exists. For example, criminal action against the three largest cigarette producers, who before the war accounted for about 70% of all cigarettes sold, resulted in fines of $255,000 against these companies and their officers. But the fines did not prevent the three companies from increasing their control of total cigarette production to over 80% at the present time.

The lightness of existing penalties is further illustrated by the fact that in only a very few cases since 1890 have any prison sentences been served for violation of the antitrust laws. In these few cases, with but one exception, the offenders were either engaged in trade union activities or business racketeering. Although the courts have the authority to imprison officers of corporations convicted of violating the antitrust laws, they have not exercised it.

A review of cases since 1890 also shows that a substantial number of corporations have been named repeatedly as defendants in antitrust suits. In many of these cases the corporations have pleaded *nolo contendere*, or agreed to accept consent decrees. They then proceeded to commit new violations of the antitrust laws. Again because of insufficient personnel and funds, the Antitrust Division frequently accepts pleas of *nolo contendere* and consent decrees instead of fighting the cases through to a conclusion. This enables the defendants to escape the triple damage provisions of the Sherman and Clayton Acts and to avoid the publicity of criminal and civil actions that are fought through.

The discrepancy between the Government's resources in funds and personnel and the magnitude of the anti-monopoly problem can be illustrated by a few examples. In the Hartford-Empire case (see p. 267), the Antitrust Division has estimated that the defendants spent well over two million dollars. By contrast, in only one year has the entire appropriation of the Antitrust Division exceeded this sum. In the Hartford-Empire case, the defendants had 30 attorneys working in their defense; the Government had five.

In the case against Paramount Pictures, Inc., *et al.*, the Antitrust Division had ten lawyers against 50 for the defendants. In the suit against the Wisconsin Cheese Association there were five government lawyers, 33 for the defendants. In the Madison Oil case the defendants had 103 attorneys; the Government, five.

Wanted: a bigger budget

The Antitrust Division has estimated that the preparation and prosecution of a big case cost about $250,000 to $500,000 — about 13% to 26% of its entire 1947 fiscal budget. A few big cases would thus tie up most of the Antitrust Division's funds and personnel for several years. Other pressing cases would have to be disregarded and important administrative responsibilities neglected.

The Antitrust Division has admitted its failure to prevent the growth of monopoly in the past and has stressed the problems that must be solved if the continued growth of economic concentration is to be combated. It has pointed out:

"The monopoly problem in American industry is today more serious and widespread than at any time since the passage of the Sherman Act.

. . . The concentration trend continues

"The problem must be appraised in the light of the developments that have taken place not only in the United States but in the entire world during the 57 years that have elapsed since the passage of the Sherman Act. This legislation was adopted to curb the growing power of the 'trusts.' In the first decades following the turn of the century, the growth of business and the technological and scientific advances in industry were so rapid that expansion of the larger corporations outpaced the modest efforts then being made in antitrust enforcement. The inevitable concentrations that occurred in World War I were followed by the 'era of consolidation' which saw the industrial giants growing still larger. The emergence of a new threat, the cartel system, introduced international considerations and brought foreign pressures into play.

"World War II brought an even greater concentration of economic power into the control of the larger industrial concerns. And the trend that was accelerated during World War II still continues unabated today.

"It is apparent that there are economic forces which have constantly and perhaps inevitably made the monopoly problem increasingly more serious. . . . It would be unrealistic . . . to assume that efforts to cope with the monopoly problem have been or can be effective if resources available for enforcement continue to be as inadequate as previous appropriations."

The present Congress showed its appreciation of the need for curbing monopolistic practices and the growth of economic concentration by sharply cutting the hopelessly inadequate appropriation of the Antitrust Division.

Wanted: a tight antimonopoly program

But the ineffectiveness of antitrust enforcement is not solely due to lack of adequate funds and personnel. The present antitrust laws, even if properly enforced, could do little more than retard the trend somewhat. To reverse, or even to stop, the trend, glaring loopholes must be closed; the abuse of patents for the purpose of establishing and continuing monopolistic practices must be ended; international cartels that restrict production and enforce monopolistic prices must be curbed. In short, it is necessary to develop a rounded antimonopoly program that can tackle the evils which have grown up since 1890, and which, if not corrected very soon, will lead to the undermining of the political as well as the economic institutions of the country.

Consumers Union in subsequent issues will present some concrete recommendations for a program to combat monopolistic controls and practices in the interests of consumers.

Photo by Ralph Crane-Black Star

Five years ago sugar rationing began, and you were in a line like this, waiting for a ration book. In June need for it ended. Whether the end was premature remains to be seen

End of the Line

Just a little more than five years ago, consumers all over the country lined up at their nearest schools to register for ration books. The advent of sugar rationing had been announced more than a month before it went into effect, with the result that the imbalances and evils it was designed to correct — hoarding, high prices and tie-in sales — had already become aggravated.

At that time *Bread & Butter* stated, "We are all for sugar rationing. It is a prelude to more general rationing, which is inevitable, and the experience will be valuable to the public and the OPA."

While most grocers' shelves were bare of sugar as a result of housewives' raids following the announcement of rationing, there was some doubt about whether an actual shortage existed, for considerable evidence introduced before congressional committees had disclosed that there would be normal supplies during 1942. The mystery was heightened by trade claims that more than adequate supplies would be available in 1942 and 1943; that there might even be an embarrassing supply of sugar. Opposed were the Government's counterclaims that the shortage was bona fide, and that the possible prospect of future improved supplies did not alter present facts. The question of supply was critical during much of the five-year rationing period, as housewives

with sugar stamps often failed to find sugar on their grocers' shelves. At times the situation became so serious that the OPA had to take cognizance of it by extending the life of the stamps.

Mystery again

When sugar rationing for the consumer ended last month, an air of mystery again surrounded the question of supply. The Government's authority to ration sugar, at first due to end last March 31st, had been extended to October 31st. In asking Congress for the extension, President Truman explained that it was necessary to assure equitable distribution of the short supply among consumers and industrial users.

The official explanation of the sudden removal of sugar from rationing was offered by Secretary of Agriculture Anderson, who said it was made possible by the International Emergency Food Council's announcement that the United States would receive 350,000 additional tons of sugar from the Cuban crop, raising the U. S. sugar allocation this year to 7,150,000 tons, compared with a prewar consumption of about 6,700,000 tons.

Another explanation came from congressional opponents of the Administration, who were caught in the midst of rushing through bills to end household rationing. They suggested that Mr. Anderson might have hurried to lift the last remnant of wartime rationing in order to anticipate congressional action.

So it is still not clear whether the supply picture has changed markedly since President Truman made his request, or whether political considerations motivated the scrapping of sugar rationing.

Prices and inconsistencies

Bakeries, soft drink and candy manufacturers, and other industrial users of sugar are still being rationed and the price of sugar is still generally controlled. These controls will remain until October 31st unless Secretary Anderson decides to end them before that date. Such action would be inconsistent with his own testimony in a letter to Senator Carl A. Hatch in January, 1947, that if rationing and price control of sugar were ended, the price would go to 50¢ a pound. But, as the record shows, there have been inconsistencies in the picture before this.

Although price control on sugar is to be continued for the present, the president of the National Association of Retail Grocers, in a press interview on the subject, made the rather revealing statement that "price control is a joke when merchandise is scarce." Apparently the trade takes a different view of current supplies than Secretary Anderson.

Correction

The figure of .01% given in the diagrams on page 166 of the May Reports *was incorrect. It should have been .1%.*

Sales Tax Drive

Ever since the war ended the burden of taxes has been increasingly shifted to the low- and middle-income groups. In the 1945 fiscal year, corporate taxes made up 35% of the Government's total revenue. But soon after V-J Day, Congress repealed the excess profits tax, thus greatly lightening the share of the tax load borne by corporations. In the current fiscal year, according to government estimates, only 22% of the total revenue will come from corporations.

By contrast, the proportion of total revenue derived from personal income taxes has become greater. In the 1940 fiscal year, individuals paid 24% of total Federal taxes; during the 1945 fiscal year, 43%; and in the current fiscal year, the figure will be 51%. Most of this increase has come from the low- and middle-income brackets. In the 1940 fiscal year, individuals with incomes of less than $5000 paid less than 10% of total Federal income taxes. By 1945 they paid almost 50%. In the past year the proportion rose to 57%.

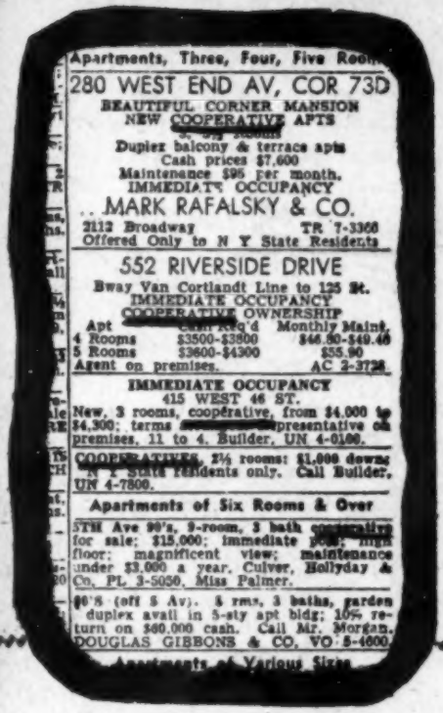
Moreover, the low- and middle-income groups have borne the brunt of the steep wartime rise in excise taxes — from 1.9 billion dollars in 1939 to over 7 billion in 1946. This year excise taxes are estimated at around 8 billion dollars, and Congress has continued the heavy wartime excises until June 30, 1948, although they are a serious drain on purchasing power.

Now, despite this maldistribution of the tax load, congressional leaders have started a drive for a general sales tax in 1948.

Because of the obviously regressive character of the sales tax — it hits the family with an income of $2500 three to four times as hard as the family with an income over $10,000 — the great majority of the people has consistently opposed its enactment by Congress in any form And so the current sales tax drive in Congress is being pushed as a move for a manufacturers' excise tax. But that is only another name for a sales tax that will be paid — with a vengeance — by the consumer. The manufacturer would add the general excise tax to his sales price. The wholesaler would then pass on the tax to the retailer plus his customary markup. The retailer would pass the tax along to the consumer and add his markup. Thus, the consumer would pay not only the full tax but higher markups as well.

The sales tax drive is not to be discounted by consumers. It has powerful backing in Congress. According to the *Journal of Commerce*, important congressional circles will "attempt to popularize a manufacturers' sales tax by tying it in with a debt reduction program . . . If the Republicans can tie the sales tax on an idea like cutting the public debt . . . they may figure they can give this type of levy some of the popular appeal it now lacks."

by Simon Breines and Ralph Pomerance, architects



Apartments, Three, Four, Five Rooms

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BEAUTIFUL CORNER MANSION
NEW COOPERATIVE APTS
Duplex balcony & terrace apts
Cash prices $7,600
Maintenance $95 per month.
IMMEDIATE OCCUPANCY
.. MARK RAFALSKY & CO.
2112 Broadway TR 7-3368
Offered Only to N Y State Residents

552 RIVERSIDE DRIVE
Bway Van Cortlandt Line to 125 St.
IMMEDIATE OCCUPANCY
COOPERATIVE OWNERSHIP

Apt	Cash Req'd	Monthly Maint.
4 Rooms	$3500-$3800	$46.80-$49.40
5 Rooms	$3600-$4300	$55.90

Agent on premises. AC 2-3728.

IMMEDIATE OCCUPANCY
415 WEST 46 ST.
New, 3 rooms, cooperative, from $4,000 to $4,300; terms [illegible] representative on premises, 11 to 4. Builder, UN 4-0100.

COOPERATIVES, 2½ rooms: $1,000 down; N Y State residents only. Call Builder, UN 4-7800.

Apartments of Six Rooms & Over

5TH Ave 90's, 9-room, 3 bath [illegible] for sale; $15,000; immediate poss; high floor; magnificent view; maintenance under $3,000 a year. Culver, Hollyday & Co. PL 3-5050. Miss Palmer.

90'S (off 5 Av). 5 rms, 3 baths, garden duplex avail in 5-sty apt bldg; 10% return on $60,000 cash. Call Mr. Morgan. DOUGLAS GIBBONS & CO. VO 5-4600

Apartments of Various Sizes

Apartment listings are full of ads for "cooperatives" these days. Just what does the term, as the ads use it, mean?

Some Facts about Cooperative Housing

To many, the cooperative idea seems to be the perfect solution to the housing problem. It is something less than that. But it does have important advantages. And right now, with 5% to 10% of the families in America in immediate need of adequate housing, it has thousands of prospective customers. The first thing is to know, thus to avoid, some of the stumbling blocks that come between the idea and the solution.

Speaking broadly, there are two types of cooperatives in the housing field. In the first, a speculative builder undertakes a project, then sells it to individuals. This is "cooperative" or tenant ownership, promoted under profit auspices. In the second, a number of individuals, acting as a group, actually have the project erected through a contractor of their choosing. The group may be building cooperatively, but granting a full ownership to the member; or it may be a true consumer cooperative, building and administering housing to serve its members.

The "speculative" co-op

This may appear to be a relatively simple arrangement, in which the individual need be concerned only with his ability to pay a purchase price and subsequent carrying costs. Usually he buys stock in the cooperative and receives the right to lease a specific dwelling unit. But the financial details and the responsibility, financial and otherwise, of the other participants had better be investigated by the purchaser, because the continuing ability of each one to meet his obligation is vital to the whole project and to the security of each investor.

Aside from his group responsibility, the individual purchaser, under today's market conditions, is in much the same position as the buyer of an individual house. The underlying reason for the growing number of such cooperative operations now lies in the desire of the builder to collect his profit in today's fancy market.

Generally, speculatively built cooperatives are aimed at a relatively high income group. For an estimate of the costs involved, see the analysis prepared by Dale R. Johnson (Housing Consultant, Eastern Cooperatives, Inc.), page 272.

The group co-op

The group that builds cooperatively but grants full ownership to the member usually plans individual dwellings, grants members individual title, and continues as a cooperative association for limited community services. In these co-venture projects, a withdrawing member is free to sell his property at market price to a purchaser of his own choosing. He can thus capture the savings created by the group's cooperative action at the expense of the next occupant, with the result that the moderate income group for whom the housing was originally built soon finds itself unable to buy.

The cooperative group, as a financial entity, is actually taking the place of the speculative builder. Usually such groups are interested in achieving low building costs and low carrying charges — today a major feat in itself. And when added to all the other problems which hamper the true building cooperative, achieving these low costs presents serious obstacles.

In the purest form, the cooperative retains title, leasing the dwelling to the member at the maintenance or rent necessary to pay all anticipated expenses. Earnings beyond necessary reserves are usually refunded by means of a rent rebate. A withdrawing member would receive his investment back, with the new member making a comparable investment. Thus the housing continues to offer prospective new members fair values.

Rather than seeking to start off with a share-capital

cooperative, many groups are using the technique of creating a membership association to work out the answers to "Where?", "What?", "When?", "How much down?", "How much a month?" This association surveys its members' needs and desires, ability to pay, etc., investigates sites, construction possibilities, legal, organizational and financial possibilities. Preliminary expenses are met by a membership fee, perhaps $10 or $20 per family. Only after the membership group has worked out a basic program must the prospective member decide on his subscription.

After the group has been organized, the number of families, space requirements and general location should be determined, and an architect retained. Consider the financial obligations assumed thus far.

The architect's fee will probably not be very great for the preliminary work. The land, assuming it is bought with the help of a mortgage — which is to be removed before construction starts — will probably represent a cost of $30 to $70 per room. If the dwelling unit is four and one-half rooms, this means a cash outlay of $135 to $315 per family, in the nature of an option or deposit. It is subject to the usual risks facing the speculative builder in the event the project does not go ahead.

In addition to these costs, the cooperative must be prepared to pay for topographical surveys, and final architectural and engineering work, which normally should involve a cost of 3% to 4% of the total cost of construction. Based on an assumed cost of $7500 per family unit, this outlay will come to an additional $225 to $300 per family. A mortgage loan must be arranged, and legal and brokerage fees are involved here as well as in the initial land-purchase contract. The minimum outlay per family will be about $500 at this point.

With land under contract, drawings completed, and a firm mortgage commitment, bids can be taken and, if the cost of construction is within the limit of the group's financial ability, the job can go ahead. At this point, the balance of the equity required above the mortgage should be forthcoming. Assuming a mortgage of 80% of total cost, the cash required from each family will probably be $1800 or more.

As housing projects go, the procedure is fairly simple if all goes well. The problem lies in recognizing that the preliminary cost estimates can be upset in the final stage, and that the risk of losing the initial investment is always present. The reward for that risk is what the speculative builder is normally interested in. The co-op, in assuming the risk, stands to gain the profit indirectly through reduced cost. However, the final saving may not be quite as much as anticipated.

It is true that the speculative builder's profit is eliminated. But that does not do away with all profit. For example, the speculative builder usually does his own contracting. This the cooperative cannot do. It must therefore pay some contractor a profit, probably not as great as the speculative builder's, but a profit nevertheless. Another factor which will probably increase costs for the co-op is the quality of the building, which will probably be better than that which the speculator, interested only in a return on his risk, would provide. This factor, while indicating a relatively higher initial cost to the co-op, does not in reality mean a higher cost: it means a better product.

From the foregoing, it would seem that a well-built cooperative housing project may not result in a lowering of initial costs. However, a group operation should be more economical than individual home construction, and a properly planned and organized cooperative should be able to achieve low operating costs and maintain a good resale value.

Eastern Cooperatives, Inc., 44 West 143rd Street, New York 30, N. Y., maintains a Housing Service to help cooperative groups obtain information, set up their organization, select sites, select professional personnel, arrange for financing and construction, and to set up their administrative plans. The National Cooperative Mutual Housing Association, 343 S. Dearborn Street, Chicago, Illinois, also may be of help.

The cost of the speculative co-op

The so-called "co-op" apartments of the speculative co-op are usually promoted by a real estate agency which handles the sales of the shares. Leases frequently obligate the tenant for 10, 25, or 99 years. Interest rates are often above 4%. Any prospective purchaser should determine total purchase price as follows:

1) Total amount of shares to be purchased ..... $_____
2) Pro rata portion of the mortgage debt ..... $_____
Total purchase price ..... $_____

Housing in most metropolitan areas is likely to shrink to a more normal value of $1800 to $1500 or less per room.

Next come the monthly carrying charges. The lease figure is generally an estimate, not a guarantee. The following tabulation should be made:

Pro rata portion of taxes chargeable against his unit .... $_____
Interest and debt service on his pro rata portion of mortgage ..... $_____
Maintenance charge for heat, janitor service, insurance, building repairs, replacement reserves, redecoration, management and other expenses ($50 to $70 per room per year is likely to be necessary) ..... $_____
Allowance for vacancy and rent losses equal to about 1/19 of the total thus far (5% vacancy) ..... $_____
Interest on and return of equity investment — a minimum of 6% (4% interest, 2% depreciation) ..... $_____

The total of these items is the approximate true monthly cost to the member, excluding possible capital losses. But it is quite possible for drastic shrinkage of the equity greatly to increase the monthly cost. The total — for a secure project — ought to be no more than the rent for a comparable apartment in 1940.

new records

CU's record consultant passes judgment on some of the new releases of both major and independent companies

ADAM: Giselle — Ballet Suite (arr. Constant Lambert). Covent Garden Royal Opera Orchestra under Constant Lambert. *Columbia* Album X277 (two 12-inch records), $3. ¶ Adolphe Adam's score for this early 19th century ballet classic contains some charming if not overly consequential music. The recorded performance is first-rate.

BARTOK: Piano Concerto No. 3. Gyorgy Sandor with the Philadelphia Orchestra. *Columbia* Album M-674 (three 12-inch records), $4. ¶ The last work composed by Hungary's great 20th century master before his death in September, 1945, is music of glowing beauty and wealth of expression, particularly the superb slow movement. The performance on records, done by the participants in the world premiere, is perfection. Reproduction: excellent.

BORODIN: On the Steppes of Central Asia. Philharmonic Orchestra under Constant Lambert. *Columbia* 71956-D, $1. ¶ This atmospheric piece is one of the real gems of the Russian repertoire, yet is seldom heard in our concert halls. Superb playing by the solo clarinet distinguishes this fine new recording.

BOWLES: Sonata for Two Pianos. Arthur Gold and Robert Fizdale. *Concert Hall Society* Album A-5 (two 10-inch vinylite records), By Subscription Only. ¶ A new release in *Concert Hall Society's* de luxe subscription series is this interesting two-piano sonata by the young American composer and music critic, Paul Bowles. The first movement is full of Hindemithian motor energy; the second is a study in lyrical impressionism; while the finale is an essay in African drum rhythms. Performance: superb; recording: good.

DELIUS: Concerto for Violin and Orchestra. Albert Sammons with the Liverpool Philharmonic Orchestra under Malcolm Sargent. *Columbia* Album M-672 (three 12-inch records), $4. ¶ This one-movement Violin Concerto by England's Frederick Delius is a wonderfully sustained lyric flight for the solo instrument, with occasional commentary by the orchestra. As music it is truly lovely, and the performance by Albert Sammons, for whom it was written, is fine indeed. So, too, is the recording job.

DELIUS: The Walk to Paradise Garden (from "A Village Romeo and Juliet"). Cincinnati Symphony Orchestra under Eugene Goossens. *Victor* 11-9493, $1. ¶ This nostalgic Delian idyll gets a fine reading from Mr. Goossens and his Cincinnati players. Only if a newer version is issued under the baton of Sir Thomas Beecham is it likely to be surpassed.

DUKAS: The Sorcerer's Apprentice. National Symphony Orchestra under Enrique Jorda. *Decca* Album ED-16 (two 12-inch imported records), $3. ¶ Conducting one of London's leading orchestras, the young Spaniard, Enrique Jorda, brings us a really stunning performance of Dukas' ever-popular scherzo. The recording is superlative.

HINDEMITH: Unaccompanied Violin Sonata, Op. 31, No. 2 and Sonata in E for Violin and Piano. Ruggiero Ricci with Louis Persinger (piano). *Vox* Album 603 (two 12-inch records), $3.75. ¶ Despite the fact that they date from 1924 and 1935, respectively, both of these sonatas by the modern master, Paul Hindemith, have in common a real singing quality . . . the first impassioned, the latter more serene in mood. Ricci's performances are those of a gifted artist, and are very acceptably recorded.

MENDELSSOHN: Songs without Words—Elegy, Op. 85, No. 4; Spring Song, Op. 62, No. 6; and **CHOPIN:** Waltz in C-sharp Minor, Op. 64, No. 2. Vladimir Horowitz (piano). *Victor* 11-9519, $1. ¶ Here is Horowitz at his superlative best, playing the thrice-familiar Mendelssohn Spring Song as we have never heard it before, plus a lovely new addition to the recorded repertoire of the Songs without Words. The Chopin waltz is also well played and the recording is good.

MENOTTI: Sebastian — Ballet Suite. Robin Hood Dell Orchestra under Dimitri Mitropoulos. *Columbia* Album X-278 (two 12-inch records), $3. ¶ Gian-Carlo Menotti, successful young American composer of radio and Broadway opera, gives us this vividly colorful ballet score, depicting intrigue and witchcraft against a 17th century Venetian background. The music is not a world-shaking masterpiece, but it is effective, and superbly played. The reproduction is distinctly better than the previous discs we've heard by the Robin Hood Dell Orchestra.

RACHMANINOFF: Piano Concerto No. 3 in D Minor, Op. 30. Cyril Smith with the City of Birmingham Orchestra under George Weldon. *Columbia* Album M-671 (five 12-inch records), $6.30. ¶ The performance here is not as taut as Rachmaninoff's own on *Victor*, but the music gains in some respects from the more expansive treatment, as well as from the less harsh and brilliant recording. Before making a final choice of this work, we suggest comparing both albums.

SCHUBERT: Symphony No. 9 in C Major. N.Y. Philharmonic-Symphony Orchestra under Bruno Walter. *Columbia* Album M-679 (six 12-inch records), $7. ¶ At last a really first-class recording performance of Schubert's great C Major Symphony. Walter is a little leisurely in the middle movements, but the end movements come off magnificently thanks in no small measure to the topnotch recording job.

STRAUSS: Race Track Galop; Thunder and Lightning Polka; Perpetuum Mobile; Radetzky March. Cleveland Orchestra under Erich Leinsdorf. *Columbia* 12543-D, $1. ¶ Eduard, Johann, Jr., and Johann, Sr., of the Strauss family are represented on this completely beguiling disc. Leinsdorf and the Clevelanders play with gusto and are beautifully recorded.

STRAVINSKY: Sonata for Two Pianos and Five Easy Pieces. Arthur Gold and Robert Fizdale. *Concert Hall Society* Album A-6 (two 12-inch vinylite records), By Subscription Only. ¶ Latest in *Concert Hall Society's* subscription series is Igor Stravinsky's aristocratic yet ingratiating Two-Piano Sonata dating from the 1940's, together with the same composer's amusing Five Easy Pieces of World War I vintage. Performance and recording are first-rate.

TCHAIKOVSKY: Serenade for Strings in C Major, Op. 48. Philadelphia Orchestra under Eugene Ormandy. *Columbia* Album M-677 (three 12-inch records), $4. ¶ Tchaikovsky's richly melodic Serenade for Strings is music made to order for the Philadelphia Orchestra string section. The performance is one of the best we've ever heard from Mr. Ormandy, and the recording is thoroughly good.

TCHAIKOVSKY: Symphony No. 2 in C Minor, Op. 17 ("Little Russian"). Minneapolis Symphony under Dimitri Mitropoulos. *Columbia* Album M-673 (five 12-inch records), $6. ¶ Lack of room resonance wreaks havoc with this recording of Tchaikovsky's youthful Second Symphony and its Russian folk airs. Goossens and the Cincinnati Symphony offer on *Victor* not only a more spirited reading, but benefit from infinitely more brilliant and transparent recording.

WEILL: Street Scene — Selections. Anne Jeffreys, Polna Stoska, Brian Sullivan and others of the original New York Production with Orchestra under Maurice Abravanel. *Columbia* Album M-683 (six 12-inch records), $7.30. ¶ Along with Marc Blitzstein, Kurt Weill is one of that group of composers who has tried to create a new form of opera by combining elements of both art-music and popular music. From his most successful effort to date, the music setting of Elmer Rice's "Street Scene," *Columbia* has prepared a well-integrated six-record album, which gives us the major highlights of the score, as well as a sense of the musical and dramatic continuity. Recording and performance are excellent.

For the People CONT'D FROM P. 232

Old Gold Cigarettes

Hearings are still being held on a complaint issued March 5, 1943, by FTC against P. Lorillard Co. charging the company with making false advertising claims for *Old Gold Cigarettes.*

Part of the complaint relates to an advertising campaign conducted in periodicals and over the radio following publication in the July, 1942, *Reader's Digest* of a report on laboratory tests of "7 leading cigarettes." The Lorillard Co. subsequently made much of the test showing that *Old Gold* was lowest in nicotine content and in throat-irritating tars and resins. It claimed that *Old Gold* was, therefore, "easier on the throat" than any other brand.

What Lorillard failed to reveal was that the laboratory report stated "the differences between brands are, practically speaking, small, and no single brand is so superior to its competitors as to justify its selection on the ground that it is less harmful."

According to the laboratory tests, as reported in the magazine, the amount of nicotine in the smoke of *Old Golds* averaged 2.04 mg. per cigarette, and the amount in two other brands was only slightly higher, being 2.20 mg., while the average of the cigarette having the largest nicotine content was only 3.02 mg. The Government alleges these differences are insignificant.

Consumers Union warned against *Old Gold's* exploitation of the *Reader's Digest* tests in the July, 1942, issue of the *Reports.* Excerpts: "It (the *Reader's Digest* report) is fair, so far as we can make out. We have checked back to see how its conclusions check with the results of our first tests on cigarettes (July, 1938) and we find a wellnigh perfect identity. Such economically wasteful nonsense as *Old Gold* is dishing out will be stopped not by trying to educate *Old Gold* but by educating the people to spot the frauds and fancies which distinguish so much advertising — cigarette and other."

Yardley of London, Inc.

Twelve thousand pounds of oatmeal flour in the possession of Yardley of London, Inc., intended for use in the manufacture of a cosmetic, were found by F&DA to be contaminated with urine. The product had been stored under insanitary conditions *after* shipment. No claimant having appeared, the product was condemned and ordered delivered to a Federal correctional institution for use as hog feed.

Standard Drug Co.

F&DA found that 95 jugs of elixir phenobarbital shipped by the Standard Drug Co. of Newark, N. J., to Pennsylvania had been adulterated. The drug, which was labeled *Elixir Phenobarbital Green . . . For use as a sedative and hypnotic,* was found to contain a coal-tar dye, which is certified for use only in *externally* applied drugs and cosmetics. Since phenobarbital is taken *internally,* the Government could not permit its use when it contained the coal-tar dye.

Since no claimant appeared, a judgment of condemnation was entered, and the product was ordered destroyed.

Letters CONT'D FROM P. 231

mystery to me. It so happens that I have recently been through this situation thoroughly, and the only possible conclusion I can reach is that the local plan is simply a method of getting maternity benefits at a reduced price, at the expense of the non-maternity subscribers . . . the plan attracts prospective parents. . . . Unless members of these plans are possibilities for the maternity benefits, they are simply getting nothing for their money, barring the unusual. Aside from a few slight tonsil and similar inexpensive operations, they will never receive any benefit from such a plan . . .

¶ There seems to be as much disagreement about the merit of Blue Cross plans as about our comments on the plans.

If one bars "the unusual," as suggested, there would seem to be little reason for many kinds of insurance, which are designed to protect against the unusual.

Cumulative Index

—Each issue contains this cumulative index of principal subjects covered since publication of the 1947 Buying Guide issue. By supplementing the Buying Guide index with this one, readers can locate current material and keep abreast of changes resulting from new tests. Page numbers run consecutively from the January 1947 issue: Jan. 1–28, Feb. 29–56, Mar. 57–84, Apr. 85–132, May 133–180, June 181–228, July 229–276.

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CONSUMERS UNION

17 UNION SQUARE WEST, NEW YORK, 3

I ENCLOSE $5 FOR WHICH PLEASE

☐ Enter my subscription to Consumers Union publications (including the Buying Guide issue) for one year.

☐ Renew my subscription for one year.

I ENCLOSE $8.50 FOR WHICH PLEASE

☐ Enter my subscription to Consumers Union publication for two years.

☐ Renew my subscription for two years.

I am enclosing $..... for which please send me the following:

☐ Bound volume of the Reports, 1946—$3

☐ Set of three volumes, 1946 plus '42, '43, '44, '45 (circle years wanted)—$5

Name.....

Address.....

.....7CU

To help *Reports* readers get "Best Buys" for their movie money, CU presents ratings made up with the aid of some 2000 subscribers, most of them group leaders, and members of CU's National Advisory Committee. Each participant, as soon as he sees a picture, notifies CU by special card whether he considers it "Excellent **(e)**," "Good **(g)**," "Fair **(f)**," or "Poor **(p)**." The tabulation shows the percentage of replies in each category (largest vote is in boldface). How several movie critics **(c)** felt is also indicated, to the extent that various opinions can be summarized. (*CU neither selects the pictures nor makes recommendations, but simply reports the results of its poll.*)

consumer reports

CU's movie poll

July 1947

Picture & Stars	%e	%g	%f	%p	c
BEGINNING OR THE END Audrey Totter, Robert Walker	30	**37**	27	6	G
BEST YEARS OF OUR LIVES Fredric March, Myrna Loy	**86**	12	2	0	E
BOOMERANG! Dana Andrews, Jane Wyatt	**77**	21	2	0	E
BRIEF ENCOUNTER Celia Johnson, Trevor Howard	**86**	11	3	0	E
CALIFORNIA Barbara Stanwyck, Ray Milland	5	**57**	35	5	G
THE CHASE Robert Cummings, Michele Morgan	5	39	**43**	13	P
DUEL IN THE SUN Gregory Peck, Jennifer Jones	24	**40**	32	4	FG
EGG AND I Fred MacMurray, Claudette Colbert	28	**52**	16	4	FG
FARMER'S DAUGHTER Loretta Young, Joseph Cotten	44	**48**	8	0	G
GREAT EXPECTATIONS John Mills, Valerie Hobson	**83**	17	0	0	E
HENRY V Laurence Olivier	**97**	3	0	0	E
HUMORESQUE Joan Crawford, John Garfield	**36**	33	26	5	G
IT HAPPENED IN BROOKLYN Frank Sinatra, Jimmy Durante	16	16	**63**	5	F
IT'S A WONDERFUL LIFE James Stewart, Donna Reed	**70**	26	4	0	E
LADY IN THE LAKE Robert Montgomery, Audrey Totter	19	**61**	16	4	G
LATE GEORGE APLEY Ronald Colman, Peggy Cummins	**47**	20	21	0	G
THE LOCKET Laraine Day, Robert Mitchum	19	**55**	13	13	F
MACOMBER AFFAIR Gregory Peck, Joan Bennett	9	**37**	27	27	G
MAGNIFICENT DOLL Ginger Rogers, Burgess Meredith	**42**	26	26	6	E
MARGIE Jeanne Crain, Alan Young	37	**55**	8	0	G
MY DARLING CLEMENTINE Linda Darnell, Victor Mature	12	**58**	29	9	G
MY FAVORITE BRUNETTE Dorothy Lamour, Bob Hope	15	**58**	27	0	G
NORA PRENTISS Ann Sheridan, Kent Smith	27	**37**	21	15	G
NOTORIOUS Ingrid Bergman, Cary Grant	35	**50**	12	3	G
NOTORIOUS GENTLEMAN Rex Harrison, Lilli Palmer	30	**42**	20	8	E
OPEN CITY Aldo Fabrizi, Anna Magnani	**76**	24	0	0	E
PERFECT MARRIAGE David Niven, Loretta Young	0	13	**46**	41	F
PURSUED Robert Mitchum, Teresa Wright	30	**70**	0	0	F
RAZOR'S EDGE Tyrone Power, Gene Tierney	**37**	35	20	8	G
RED HOUSE Edward G. Robinson, Judith Anderson	32	**58**	5	5	G
SECRET HEART Claudette Colbert, Walter Pidgeon	28	**52**	17	3	G
SHOCKING MISS PILGRIM Betty Grable, Dick Haymes	0	35	**57**	8	G
SHOW-OFF Red Skelton, Marilyn Maxwell	4	33	**40**	23	G
SINBAD THE SAILOR Maureen O'Hara, Douglas Fairbanks, Jr.	11	**52**	34	3	G
SMASH-UP Susan Hayward, Eddie Albert	31	**38**	12	19	G
SONG OF THE SOUTH Cartoon-Live Action	**46**	39	12	3	E
STAIRWAY TO HEAVEN David Niven, Kim Hunter	**73**	21	3	3	G
STRANGE WOMAN Hedy Lamarr, George Sanders	9	**60**	20	11	G
SWELL GUY Sonny Tufts, Ann Blyth	5	**52**	29	14	FG
13 RUE MADELEINE James Cagney, Annabella	30	**50**	18	2	G
TILL THE CLOUDS ROLL BY Judy Garland, Robert Walker	27	**51**	20	2	G
WELLDIGGER'S DAUGHTER Raimu, Fernandel	**70**	30	0	0	E
THE YEARLING Gregory Peck, Jane Wyman	**71**	21	8	0	GE

The returns aren't in

When more returns are received from CU subscribers, these movies will be rated; until then, here are critics' scorings:

Picture & Stars	*Critics' Opinions*
BRASHER DOUBLOON — George Montgomery, Nancy Guild	F
CALCUTTA — Alan Ladd, William Bendix	F
CARNEGIE HALL — All-star musical cast	FG
DEAR RUTH — Joan Caulfield, William Holden	G
HIGH BARBAREE — June Allyson, Van Johnson	F
IMPERFECT LADY — Teresa Wright, Ray Milland	FG
IT HAPPENED ON FIFTH AVENUE — Don DeFore, Ann Harding	F
MIRACLE ON 34TH STREET — Maureen O'Hara, John Payne	GE
MONSIEUR VERDOUX — Charles Chaplin	GE
ODD MAN OUT — James Mason	GE
POSSESSED — Joan Crawford, Van Heflin	FG
THIS HAPPY BREED — Celia Johnson, John Mills	E

Older but still active

These releases may still be showing in your community; here is how CU subscribers have rated them in the past:

Picture & Stars	*% Rating*
ANGEL ON MY SHOULDER — Paul Muni, Anne Baxter	66 G
BACHELOR'S DAUGHTERS — Gail Russell, Adolphe Menjou	45 G
BLUE SKIES — Bing Crosby, Fred Astaire	45 G
CAESAR AND CLEOPATRA — Claude Rains, Vivien Leigh	54 E
DARK MIRROR — Lew Ayres, Olivia de Havilland	54 G
DECEPTION — Bette Davis, Paul Henreid	47 G
I'VE ALWAYS LOVED YOU — Philip Dorn, Catherine McLeod	49 G
MAN I LOVE — Ida Lupino, Robert Alda	41 F
RETURN OF MONTE CRISTO — Louis Hayward, Louise Britton	48 G
TWO YEARS BEFORE THE MAST — Alan Ladd, William Bendix	28 F, 28 G
UNDERCURRENT — Katharine Hepburn, Robert Taylor	44 E
THE VERDICT — Sidney Greenstreet, Peter Lorre	57 G

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sunburn preventives

See September 1946
Reports *for*
portable typewriters

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Reports *for*
beer ratings

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Reports *for*
contact lenses